



# BEST AVAILABLE COPY

Docket No.: RIC96161

## THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Haberman et al.

Confirmation No.: 7536

Serial No.: 09/002,187

Art Unit: 2152

Filed: December 21, 1997

Examiner: T. Vu

Title: System and Method for Establishing a Virtual Circuit in an ATM Network

**RECEIVED**

OCT 11 2005

Technology Center 2100

### **FOURTH STATUS INQUIRY REGARDING PETITION TO WITHDRAW WRONGFUL HOLDING OF ABANDONMENT**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

This is Applicants FOURTH request for the status of the Petition to Withdraw Holding of Abandonment Under 37 CFR 1.181(a). Please advise us in writing as to the status of the above-noted application.

Applicants filed a Petition to Withdraw Holding of Abandonment Under 37 CFR 1.181(a) on May 10, 2001, and have not yet received a decision on the Petition. Applicants received a telephone call from Jim Alexander (P/OPPD; (703)305-8387) indicating that the official USPTO file was lost. Applicants believe that this may be hindering the decision on the Petition, so Applicants filed a copy of Applicants' file history on September 26, 2003. However, Applicants still have not yet received any type of action in this case.

October 4, 2005, Applicants reviewed the Patent Application Information Retrieval system (PAIR) for the current status on the above-noted application (copy included). Under the File History, there is an entry for "12-09-2004: Mail Reconstruction Notice." However, Applicants submit that the Notice was never received, and hereby petition to have any statutory deadlines restarted.

To expedite the reconstruction of the file, review of the Petition to Withdraw Wrongful Holding of Abandonment and issuance of the application as a patent, Applicants have submitted herewith a true copy of the file history.

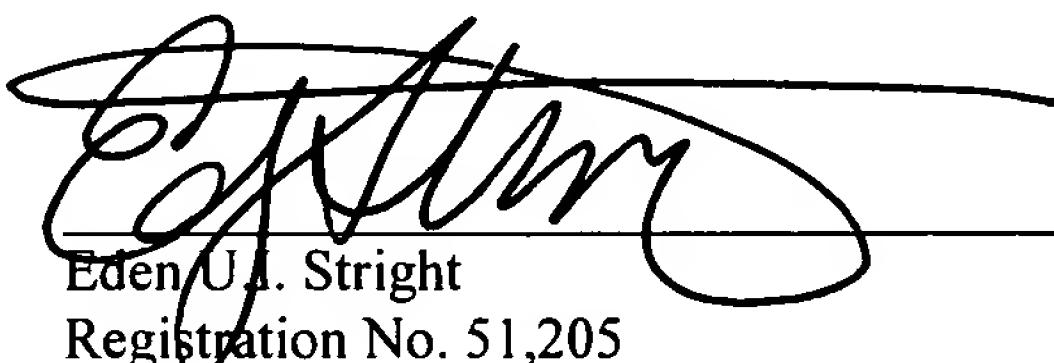
The undersigned attests that a search of the file jacket and docket records indicates that the Notice of Reconstruction was never received. Evidence that the Notice mailed on December 9, 2004, was never received is provided in the form of a copy of the docket record showing December 9, 2004, through March 9, 2005 (three months from the date of the action), where the non-received Notice would have been entered had it been received and docketed is attached to this statement.

Applicants therefore petition for withdrawal of the holding of abandonment in the above-identified application under 37 C.F.R. §1.181(a).

According to 37 C.F.R. §1.181(d) and M.P.E.P. 711.03(c), Applicants believe that no fee is due. However, should the Commissioner deem a fee due in connection with this paper, please charge any shortage in fees, including extension of time fees, to Deposit Account 13-2491 and please credit any excess fees to such deposit account.

Should anything further be required, Applicants request that the undersigned be contacted at the telephone number indicated below.

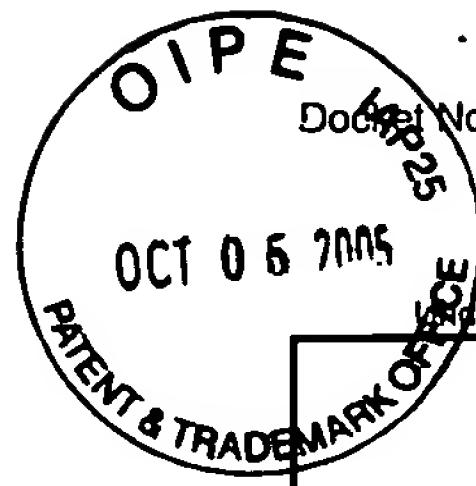
Respectfully submitted,



Eden U.I. Straight  
Registration No. 51,205

Date: October 4, 2005

MCI, Inc.  
1133 19<sup>th</sup> Street, NW  
Washington, DC 20036  
Phone: 202 736-6008  
Fax: 202-736-6382



Docket No. RIC96161

PTO/SB/92 (09-04)

Approved for use through 07/31/2006. OMB 0561-0031

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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OCT 11 2005

Technology Center 2100

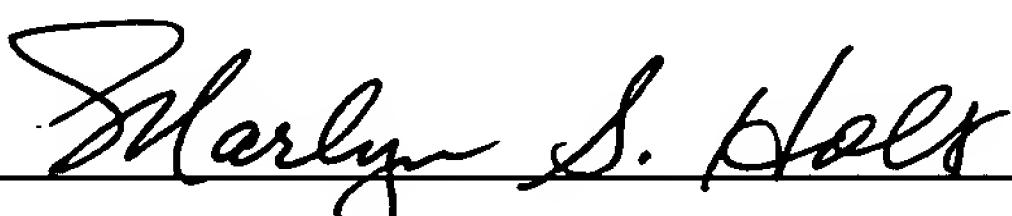
## Certificate of Mailing under 37 CFR 1.8

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

October 4, 2005

on \_\_\_\_\_  
Date



---

Signature

Marlyn Holt

---

Typed or printed name of person signing Certificate

202.736.6749

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Registration Number, if applicable

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Telephone Number

Note: Each paper must have its own certificate of mailing, or this certificate must identify each submitted paper.

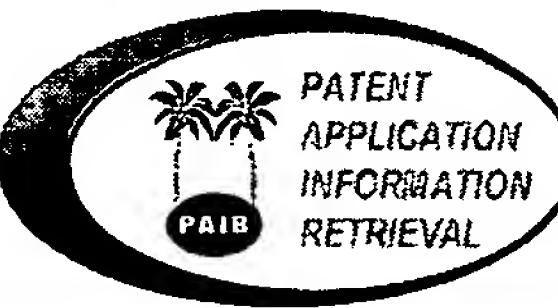
1. Fourth Status Inquiry Regarding Petition to Withdraw Wrongful Holding of Abandonment (2 pages);
2. Patent Application Information Retrieval print-out of October 4, 2005;
3. Copy of Docketing Ledger from December 9, 2004 to March 9, 2005; and
4. True Copy of File History for Application Number 09/002,187.

This collection of information is required by 37 CFR 1.8. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1.8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



## United States Patent and Trademark Office

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**PATENT APPLICATION INFORMATION RETRIEVAL**

Search results as of: 10-4-2005::9:4:56 E.T.

Search results for application number: 09/002,187			
Application Number:	09/002,187	Customer Number:	25537
Filing or 371(c) Date:	12-31-1997	Status:	Abandoned – Failure to Pay Issue Fee
Application Type:	Utility	Status Date:	04-25-2001
Examiner Name:	VU, THONG H	Location:	PUBS - FILE MAINTENANCE FACILITY, BAILEYS X-RD, 308-6789
Group Art Unit:	2152	Location Date:	04-25-2001
Confirmation Number:	7536	Earliest Publication No:	-
Attorney Docket Number:	RIC-96-161	Earliest Publication Date:	-
Class/ Sub-Class:	709/250	Patent Number:	-
First Named Inventor:	RANDY HABERMAN, ARLINGTON, TX (US)	Issue Date of Patent:	-
Title Of Invention:	SYSTEM AND METHOD FOR ESTABLISHING A VIRTUAL CIRCUIT IN AN ATM NETWORK		

## Search Options

<a href="#">Assignments</a>
<a href="#">Image File Wrapper</a>

## File History

Date	Contents Description
12-09-2004	Mail Reconstruction Notice - Abandoned Application
10-01-2003	File Marked Lost
01-24-2001	Workflow - File Sent to Contractor
05-10-2001	Workflow - Drawings Sent to Contractor
04-25-2001	Mail Notice of Abandonment from Publications
04-25-2001	Abandonment for Failure to Pay Issue Fee
03-20-2001	Workflow - Drawings Sent to Contractor
12-18-2000	Mail Notice of Allowance
12-18-2000	Notice of Allowance Data Verification Completed
12-12-2000	Date Forwarded to Examiner
12-01-2000	Amendment after Final Rejection
10-06-2000	Case Docketed to Examiner in GAU
09-11-2000	Mail Final Rejection (PTOL - 326)
09-10-2000	Final Rejection
07-25-2000	Date Forwarded to Examiner
07-24-2000	Response after Non-Final Action

04-24-2000	Mail Non-Final Rejection
04-21-2000	Non-Final Rejection
02-23-2000	Date Forwarded to Examiner
02-15-2000	Response after Non-Final Action
02-15-2000	Request for Extension of Time - Granted
08-04-1999	Mail Non-Final Rejection
08-02-1999	Non-Final Rejection
08-19-1998	Petition Decision - Granted
07-28-1998	Petition Entered
07-09-1998	Case Docketed to Examiner in GAU
06-10-1998	Application Is Now Complete
04-02-1998	Notice Mailed--Application Incomplete--Filing Date Assigned
03-27-1998	IFW Scan & PACR Auto Security Review
06-05-1998	Preexamination Location Change
02-04-1998	Initial Exam Team nn



Friday

From PTO

10/864, 670  
10/873, 715  
09/090, 384  
09/903, 571  
09/708, 068

To PTO

09/959, 025 (xc)

09/435, 540 (MM)

RCE, postcard, filed 12/4/2004  
by Harry E. Bryner  
Petition to withdraw from Class  
RCE, IDS PTO 1449, ref'd, cut  
of phone, fax confirm, USPTO  
auto-reply inform

December 10, 2004

Monday

From PTO

Notice of Appeal Pub  
Notice of Appeal Pub  
Notice of Abandonment  
Request / Elect Requirement  
Non-Serial Office Action

To PTO

December 13, 2004

From PTO

Tuesday

December 14, 2004

From PTO

09/073, 304  
10/230, 707  
09/906, 532

To PTO

09/059, 337 (oc)

Notice of Appeal fee trans  
act of mail filed by  
withholding, occurs on  
12/6/2004

09/049, 826 (oc)

RCE, amend/reply, fee  
trans, act of mail filed  
12/17/2004 by withholding  
of claim

09/159, 404 (eus)

IDS, PTO1449, USPTO acknowledgement  
from c-IDS, fee trans;

09/159, 695 (eus)

IDS, PTO1449, fee trans; USPTO acknowledgement  
from c-IDS, fee trans

09/413, 844 (eus)

IDS, PTO1449, fee trans & IDS confirm

Wednesday

From PTO

Notice of Abandonment  
Trans Comm Regarding TDS  
Non-Statute Office Actions

To PTO

09/598, 167 (mnv)  
(09/159, 514)

Record cert of name change from -  
MII, PTO1595, pay confirm  
Amend/Reply (trans file trans)  
Received, filed by ~~Priority~~  
byler on 12/9/2004

10/648, 4227 (ac)

Amend/Reply (trans file trans)  
Received, filed by ~~Priority~~  
byler on 12/16/2004

10/101, 199 (oc)

Pardon to withdraw from closure after  
payment of close fee RCE, TDS, PTO1449,  
Refd, cert of hand-deliver, postcard

09/707, 476 (mnv)

Pardon to withdraw from closure after  
payment of close fee RCE, TDS, PTO1449,  
Refd, cert of hand-deliver, postcard

Thursday  
From PTO

10/059 057  
10/060 259  
09/159 695

Updated filing Receipt  
Notice of Recordination  
Final Office Action

December 16, 2004

Friday  
From PTO

10/054 594  
09/224 167  
10/023 043  
09/897 860  
09/159 514

Notice of Recordination  
Final Office Action  
Final Office Action  
Non-Serial Office Action  
Notice of Recordination (via fax)

December 17, 2004

From PTO

10/054 594  
09/224 167  
10/023 043  
09/897 860  
09/159 514

Notice of Recordination  
Final Office Action  
Final Office Action  
Non-Serial Office Action  
Notice of Recordination (via fax)

No PTO

10/302,159 (cc)

Amend / reply (trans & file trans) ltr.  
postcard filed by Holarity & Snyder  
on 12/15/2004

10/013,079(cc)

Amend / reply (trans & file trans) ltr,  
(trans & file trans) postcard filed  
12/15/2004 by Holarity & Snyder

09/534,003(1MM)

Power / revocation of attorney and of  
trans, fax confirm, USPTO  
auto - rep by confirm

Mondays

<u>From PTO</u>
09/163, 227
10/020, 893
09/1449, 500

Tuesday

<u>From PTO</u>
09/168, 077

December 21, 2004

Decision on Petition (with financial)  
Decision on Petition (without financial)

26 PTO

09/151, 404 (eus)

IDS, PTO 1449, USPTO e-IDS  
confirmation. Note: e-IDS  
actually filed 12/19/2004 but  
confirmation has date stamp  
of 12/20/2004, per trans.

09/151, 695 (eus)

IDS PTO 1449, few trans, e-IDS  
confirmation. Note: e-IDS actually  
filed 12/19/2004 but confirmation  
date stamp of 12/20/2004

26 PTO

10/621, 000 (PAP/AVT)

RICO / Power of attorney, 3.73(b)  
front / Cost of trans, fax confirm,  
USPTO auto reply confirm

09/723, 402 (eus)

IDS PTO 1449, few trans, e-IDS  
confirmation

09/725, 401 (eus)

IDS, PTO 1449, few trans, e-IDS  
confirmation

09/723; 501 (eus)

IDS, PTO 1449, few trans, e-IDS  
confirmation

09/723, 400 (eus)

IDS, PTO 1449, few trans, e-IDS  
confirmation

December 23, 2004

Thursday  
From PTO

10/082, 657  
09/575, 770 and  
09/768, 88 070 and  
Notice of applic. Put  
Non-Short Offers Actions  
Notice of allow & Close the Due Date

To PTO

09/036, 146 (eus)

IDS, PT01447, e-IDS confirm;

To PTO

09/539, 203 (eus)

Consider Pay Trans, Trans  
act of Trans, fax confirm  
USPTO Auto Reply confirm

09/431, 590 (eus)

Trans the Pay Trans, 312 Amend  
bill of FO 1165, 6 Sheets FD, Request  
for consideration of previously submitted  
IDS, Trans, act of Trans, fax  
confirm, USPTO Auto-Reply confirm

Wednesday  
From PTO

10/082, 657  
09/575, 770 and  
09/768, 88 070 and

To PTO

09/036, 146 (eus)

IDS, PT01447, e-IDS confirm;

December 22, 2004

Thursday  
From PTO

Notice of applic. Put  
Non-Short Offers Actions  
Notice of allow & Close the Due Date

To PTO

09/036, 146 (eus)

IDS, PT01447, e-IDS confirm;

December 23, 2004

Friday

December 24, 2004

COMPANY HOLIDAY  
OFFICE CLOSED  
FEDERAL HOLIDAY

Monday  
from PTO

09/059, 337  
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10/378, 713  
10/953, 022  
10/040, 226  
09/406, 910  
09/963, 609  
10/440, 598  
09/426, 028  
10/865, 465  
10/799, 950

to PTO

09/036, 509 (cc)

10/404, 104 (cc)

COS99054C1 (iv)

Return Postcard (from Kelly)  
Notice of Abandonment  
Notice of Abandonment  
Notice of Recitation  
Non-Jurid office action (from Kied  
Amthu)

Award/Reply (trans & fee trans), b2,  
cert of mail, filed on 12/1/2004 by  
Dultravong, Carlson

Award/Reply (trans & fee trans), b2,  
cert of mail, filed 12/1/2004 by  
Dultravong, Carlson

Continuation applies w/ 35ppg spec 6  
pg of storage, until 1/20/2005  
problem amend, applic data sheet  
dec, Pat frmr, copy of cert f  
some changes from Mew - M.L.Inc.  
art of express, filed by SPC on 12/1/2004

11

December 27, 2004

Monday (cont.)

December 21, 2004 (cont.)

From PTO (cont.)

10/99/ 515C  
10/99/ 516  
09/30/ 341  
09/76/ 416  
10/80/ 120  
10/09/ 323

Attling Rept  
Attling Rept  
Notice of abandonment  
Decl of post to withdraw from T.S.  
Notice of appeal sub (from H.E.B)  
Non-Signal Office action

To PTO (cont.)

10/02/ 090 (ac)

10/115, 251 (ac)

SK104003 (OC)

Award/Reply (trans & fee trans) 10/02/ 004  
cert of mail filed 10/21/2004  
by Bittarborg & Carlson  
Amend/Reply (trans & fee trans) 10/02/ 004  
cert of mail filed 10/20/2004  
by Bittarborg & Carlson

Util applic w/ 25pp spec, 6 sheets  
drawg dec, applic date spec/  
PTO/595 assign, util trans,  
fee trans, cert of express mail/  
filed on 12/10/2004 by Bittarborg  
& Carlson

Monday (cont.)

December 27, 2004 (cont.)

To PTO (cont.)

09/03/ 147 (EUS)

09/03/ 146 (EUS)

10/03/ 430 (EUS)

IDS, PTO 1449, 2 docs, trans  
cert of trans, fax confirm,  
USPTO - Auto-Reply confirm

IDS, PTO 1449, 2 docs, trans,  
cert of trans, fax confirm,  
USPTO Auto-Reply confirm

Brief applic Date sheet, trans,  
cert of trans, fax confirm, USPTO  
auto-Reply confirm

Request for corrected recordation w/  
copy of notice of recordation - w/  
correction noted in red, copy of  
orig PTO 1595, copy of orig executed  
version by Richard C. Schulte, fax  
confirm, USPTO Auto-Reply  
confirm

५

Tuesday

December 28, 2004

Return Postcard  
Non-Postal Office Action  
Postal Office Action

60 / 637, 465  
04 / 904, 365  
16 / 706, 298

Wednesday from PTO

09/159, 406  
10/097, 863  
10/097, 862

De PTO

09/159, 406 (ens)

Record cert of name WCOM-MC f,  
PT# 1595, USP 70 Electronic  
confirmation

Cos 98.021 C1 (cc)

Continuation applic 2) / 66 pag's spec,  
6 sheets drawing, 1 annotated drawing sheet  
beneath FD, chart of FP bts, applic,  
data sheet, IPG p10 1449, premium  
award until (plans & les) present bds,  
postcard, filed on 12/27/2004  
by Sterky & Dreyer

December 29, 2004

December 31, 2004

Friday

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09/539, 603  
08/569, 051  
09/332, 777  
16/891, 051  
16/891, 002  
16/043, 684

Policy regarding PTA (current accepted)  
Letter regarding PTA (current accepted)  
Close notification  
Notice of specific Pub  
Non-dual office action  
Notice of abandonment

OFFICE CLOSED

FEDERAL HOLIDAY

COMPANY HOLIDAY

Monday

From PTC

January 3, 2005

To PTC

REC 0003311 (ac)

Continuation applic wif/65pp  
rec, 2/1/05 bldg 1 dec,  
copy of recd/pmt, fulim award,  
applic disk short, copy of  
list of names change name - me,  
tel hand, fee items, cost  
of express mail) - filed  
1/2/05 start by returning  
e, Carlson

Tuesday

Return PTO

January 4, 2005

Tuesday (cont.)

In PTO (cont.)

10/889, 128  
10/176, 616  
10/869, 386  
  
Corrected filing Rept  
Non-trivial Office edition  
Notice of Hearstletter

CAS 97166 C2 (cc)

Continuation applic of 69 PTO  
spec, 17 sheet draft,  
dic, copy of recd/PAT,  
apply data sheet, problem  
amend, cut of name change  
M.I.W → WICOM → M.C., file  
trans, fee trans, cut of  
express mail, filed 12/28/2004  
by Dutharong, S. Caborn

In PTO

09/414, 301 (cc)

Amend / reply, trans, fee trans, 16,  
cut of express mail, filed  
by Dutharong, S.  
Carbon

10/631, 800 (cc)

Amend / reply, trans, fee trans, 16,  
terminal disclaimer, fees  
fee trans, cut of mail, filed  
12/23/2004 by Dutharong  
S. Caborn

January 4, 2005 (cont.)

Wednesday

From PTO

09/163, 821  
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Official Published Patent  
Official Subscribed Patent

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09/433, 530  
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Bilbun, Postcard  
Zone Notification  
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Thursday

From PTO

11/030, 656  
09/433, 530  
10/077, 366  
09/801, 344

Bilbun, Postcard  
Zone Notification  
Zone Verification  
Notice of Abandonment

January 4, 2005

Friday

From PTO

11/030, 656  
09/433, 530  
10/077, 366  
09/801, 344

Bilbun, Postcard  
Zone Notification  
Zone Verification  
Notice of Abandonment

To PTO  
10/960, 941  
PTO 1545, assignee, Electronic USPTO  
Confirm

To PTO  
10/960, 941

PTO 1545, assignee, Electronic USPTO  
Confirm

To PTO (cont)  
IDS, PTO 1449, c-IDS USPTO  
10/13, 662 (eus)  
Electronic confirm  
USPTO electronic confirm

To PTO (cont)  
IDS, PTO 1449, c-IDS USPTO  
10/13, 662 (eus)  
Electronic confirm  
USPTO electronic confirm

To PTO  
IDS, PTO 1449, c-IDS USPTO  
10/13, 662 (eus)  
Electronic confirm  
FD file, diktets FD, trans  
and y trans, fax confirm  
USPTO auto-reply confirm

To PTO  
IDS, PTO 1449, c-IDS USPTO  
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Electronic confirm  
USPTO electronic confirm

To PTO  
10/031, 454 (eus)  
Status Inquiry, cert options  
for confirmation, USPTO auto-  
Reply confirm

To PTO  
10/031, 454 (eus)  
Status Inquiry, cert options  
for confirmation, USPTO auto-  
Reply confirm

To PTO  
10/901, 920 (eus)  
RT NTFCA, copy of NTFCA  
Placeholder specification - 76pp/  
trans, cert of trans, fax confirm  
116 or 117 min. trans. conf.

To PTO  
10/901, 920 (eus)  
RT NTFCA, copy of NTFCA  
Placeholder specification - 76pp/  
trans, cert of trans, fax confirm  
116 or 117 min. trans. conf.

Thursday (cont.)

No PTO (cont.)

January 6, 2005 (cont.)

Friday

Thom PTC

January 7, 2005

10/15/91, 406  
PTO 1595, cert of name  
change from MCAT &  
MCI, Inc., electronic  
USPTO confirmation, e-IDS  
USPTO electronic confirm,  
IDX, PTO 1449

to PTC

10/11/91, 909 (EUS)  
e-IDS, PTO 1449, USPTO  
electronic confirmation

10/11/91, 909 (EUS)  
e-IDS, PTO 1449, USPTO  
electronic confirmation

10/11/91, 909 (EUS)  
e-IDS, PTO 1449, USPTO  
electronic confirmation

10/11/91, 972 (EUS)  
e-IDS, PTO 1449, USPTO  
electronic confirmation

e-IDS, PTO 1449, USPTO  
electronic confirmation

10/13/91 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirmation

e-IDS, PTO 1449, USPTO  
electronic confirmation

January 9, 2005SundayFrom PTO10/9/05, 041

Notice to File Patent, filing  
Rept  
Adversary action  
Complaint filed signal  
Non-Honal Office action  
Notice of abandonment  
Notice of Recordation (via fax)  
Notice of Recordation (via fax)

09/733, 501  
09/339, 209  
09/436, 796  
09/466, 460  
10/080, 498  
10/759, 400  
10/966, 641

To PTO

10/404, 112 (eus)  
e-IDS, PTO 1449, USPTO  
electronic confirm

10/404, 111 (eus)  
e-IDS, PTO 1449, USPTO  
electronic confirm

10/636, 738 (eus)  
e-IDS, PTO 1449, USPTO  
electronic confirm

10/404, 113 (eus)  
e-IDS, PTO 1449, USPTO  
electronic confirm

10/404, 079 (eus)  
e-IDS, PTO 1449, USPTO  
electronic confirm

10/404, 541 (eus)  
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electronic confirm

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e-IDS, PTO 1449, USPTO  
electronic confirm

January 10, 2005MondayFrom PTO

Notice to File Patent, filing  
Rept  
Adversary action  
Complaint filed signal  
Non-Honal Office action  
Notice of abandonment  
Notice of Recordation (via fax)  
Notice of Recordation (via fax)

09/733, 501  
09/339, 209  
09/436, 796  
09/466, 460  
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10/966, 641

To PTO

e-IDS, PTO 1449, USPTO  
electronic confirm

January 11, 2005

Tuesday

January 10, 2005 (cont.)

In PTO (cont.)

From PTC

11/016, 159 (oc)

Prelim. Consider, (trans  
& fee trans) file, cert of mail,  
filed 1/5/2005 by  
Attorney & Custom

10/115, 2,59 (oc)

Amend / reply, (trans &  
fee trans) file, cert of mail, filed  
1/6/2005 by Attorney & Custom

10/645, 071 (oc)

Amend / reply, (trans & fee trans) file  
cert of mail, filed 1/5/2005 by  
Attorney & Custom

10/054, 245(oc)

Suppl. sec. filibus under  
37 CFR 1.83, (trans & fee  
trans) file, postcard, filed  
1/4/2005 by Attorney & Custom

10/170, 340 (eas)

C-IDS, PTO 1449, USPTO  
electronic confirmation

10/099, 323 (eas)

C-IDS, PTO 1449, USPTO  
electronic confirmation

10/170, 615 (eas)

C-IDS, PTO 1449, USPTO  
electronic confirmation

Updated filing Regs  
Notice of Abandonment

Wednesday

January 12, 2005

From PTO

10/135, 439  
09/332, 777  
0.

To PTO (cont.)

Notice of abandonment  
Official published Patent  
e-IDS, PTO 1449,  
USPTO electronic confirm

10/921, 920 (EUS)

e-IDS, PTO 1449,  
USPTO electronic confirm

To PTO

01/079, 816 (OC)  
Answer/reply (trans & file  
trans) etc, postcard,  
filed 1/10/2005 by  
Matthew F. Snyder

10/385, 329 (EUS)

e-IDS, PTO 1449, electronic  
USPTO confirm

10/843, 856 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/843, 856 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/095, 910 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/095, 910 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/085, 909 (EUS)

e-IDS PTO 1449 USPTO  
electronic confirm

13 (cont.)  
January 12, 2005

Wednesday (cont.)

January 12, 2005

To PTO (cont.)

10/921, 920 (EUS)

e-IDS, PTO 1449,  
USPTO electronic confirm

10/095, 910 (EUS)

e-IDS, PTO 1449,  
USPTO electronic confirm

10/095, 910 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/095, 910 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/095, 910 (EUS)

e-IDS, PTO 1449, USPTO  
electronic confirm

10/085, 909 (EUS)

e-IDS PTO 1449 USPTO  
electronic confirm

January 13, 2005

Friday

From PTO

January 14, 2005

15

From PTO

09/002, 051

Coron Liquid Licencon of  
Non Publ and/or Name of Accts  
Storing  
Filing Report  
Updated Storing Report  
Updated Storing Report

60/637, 405  
10/768, 769  
10/769, 768

To PTO

09/001, 699(OC)

Appeal Brief, (Trans & fee filing)  
ltr, cert of postcard filed by  
Harold E Snyder on 1/1/2005  
Complaint/Reply, (Trans & fee filing)  
ltr, postcard filed by

Harold E Snyder 1/2/2005

10/440, 531(OC)

Appeal Brief, (Trans & fee  
Trans ltr, postcard filed  
by Harold E Snyder on  
1/7/2005

Monday

January 17, 2005

FEDERAL

COMPANY HOLIDAY

Tuesday

January 18, 2005

Varon PTO

1h PTO

January 19, 2005

Wednesday

Tuesday

January 24, 2005

10/040, 360	10/041, 371	10/042, 441	10/043, 441	10/044, 563
10/045, 441	10/046, 441	10/047, 441	10/048, 441	10/049, 441
10/050, 441	10/051, 441	10/052, 441	10/053, 441	10/054, 441
10/055, 441	10/056, 441	10/057, 441	10/058, 441	10/059, 441
10/060, 441	10/061, 441	10/062, 441	10/063, 441	10/064, 441

17

Police Verification	60/637, 785
Police of Hutchinson application	69/945, 589
Statute Repeal Act	10/045, 008
Filing Repeal	06/441, 008
Filing Repeal	09/016, 446
Filing Repeal	10/077, 368
Amended Illinois Law	09/433, 530
Final Affairs Section	07/414, 361
	09/036, 589
	10/464, 104
	10/621, 800
	10/621, 840
Illinois Inquiry Act	11/016, 159
Prisoner's Application	11/016, 159
Reagan Filed 12/10/2007	10/115, 251
Act of Illinois, First	10/115, 254
Completion	10/115, 250
	10/645, 071
	11/014, 566
	10/051, 162

176 P.TU

10/3/1993 (EUS)

C-IDS / USP70 Editions  
Cognitiv / 2014/49

10/09/86 3 (EUS)

C-IDS, P-61449. USP#20  
LITTLEFIELD, C. H.

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Thursday (cont.)  
to PTO (cont.)

January 20, 2005 (cont.)

Friday

From PTO

January 21, 2005

09/023,626 (cc) Owner/keeper, trans  
from Vicksburg of mail,  
filed 1/13/2005 by  
Duthuony & Carlson

10/115,454 (cc) Amend/reply (trans & few  
trans) etc, cert of mail,  
filed 1/5/2005 by  
Duthuony & Carlson

811971449 C3 (cc)  
(11/034,649)

Conf applies as of 1st pg 2  
Spec, 5 sheets charged  
and (trans & few trans);  
William Gurney applies

Do PTO  
date sheet, copy of  
trans/pkt, decy cert  
of application mailed, filed  
1/13/2005 by Duthuony  
& Carlson.

c-IDS, PTO 1449, USPTO  
electronic communication

c-IDS/Reilly, (trans & few  
trans) etc, filed  
1/10/2005 by Shastri &  
Dongdine.

10/119,811 (cc)

c-IDS, PTO 1449, USPTO  
electronic communication  
confirm

10/119,806 (cc)

c-IDS, PTO 1449, USPTO  
electronic communication  
confirm

10/117,934 (cc)

c-IDS, PTO 1449, USPTO  
electronic communication

22 Monday

From PTO

09/223, 400  
10/016, 110  
10/132, 372

Priority Action  
Non-Serial Office Action  
Non-Serial Office Action  
Non-Serial Office Action

10/975, 545  
10/979, 093  
08/845, 915  
09/575, 470  
10/110, 000

Filing Receipt  
Filing Receipt  
Notice of Allowance/Examiner Note  
Non-Serial Office Action  
Non-Serial Office Action

Tuesday

From PTO

10/975, 545  
10/979, 093  
08/845, 915  
09/575, 470  
10/110, 000

Filing Receipt  
Filing Receipt  
Notice of Allowance/Examiner Note  
Non-Serial Office Action  
Non-Serial Office Action

January 25, 2005

January 24, 2005

Priority Action  
Non-Serial Office Action  
Non-Serial Office Action  
Non-Serial Office Action

10/975, 545  
10/979, 093  
08/845, 915  
09/575, 470  
10/110, 000

Filing Receipt  
Filing Receipt  
Notice of Allowance/Examiner Note  
Non-Serial Office Action  
Non-Serial Office Action

Do PTO

Do PTO

09/087, 004 (ac) Amend/Reply, (Reserve)  
Non-Serial Office Action filed  
by Marlyle Ingels, 1/14/05  
10/001

10/009, 120 (EUS)  
C-IDS, PTO 1449, USPTO  
electronic confirmation

10/061, 375 (EUS)  
C-IDS, PTO 1449, USPTO  
electronic confirmation

09/008, 070 (DIO)  
Letter of name change  
MIN-WEIN & MCINTYRE  
PTO 15955, fax  
confirmed

Wednesday January 26, 2005

From PTO

08/560, 651  
09/435, 540  
09/690, 995  
09/408, 1225  
10/423, 194  
09/366, 710  
09/362, 951  
10/156, 930

Issue Notification  
Decision on petition to addendum  
Issue (granted)  
Board of Appeals Notice of  
Appeal #  
Notice of Allowance  
Non-Statutory Allowance  
Notice of Allowance & Issue fee Due  
Notice of Revised Procedural  
Appeal Rule Date  
Updated Billing Report

To PTO

10/09, 668 (EUS)  
10/307, 214  
09/354, 325 (EUS)

Stakes - Inquiry, cert of  
filing, fax confirm,  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of filing  
fax confirm, USPTO auto-  
Reply confirm, w/o regard to  
issue of patent

Hand Wk 6/24/2004

Wednesday (cont.)

To PTO (cont.)

09/151, 403 (EUS)  
09/430, 657 (EUS)  
09/442, 199 (EUS)

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of filing  
fax confirm, USPTO auto-  
Reply confirm, w/o regard to  
issue of patent

Stakes - Inquiry, cert of  
filing, fax confirm,  
auto-reply copy/reply  
and regard to issue of patent

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of  
filing, fax confirm, USPTO  
auto-reply copy/reply  
confirm, USPTO auto-reply  
confirm

Stakes - Inquiry, cert of filing  
fax confirm, USPTO auto-  
Reply confirm, w/o regard to  
issue of patent

January 26, 2005  
(cont.)

## Wednesday (cont.)

January 26, 2015 (cont.)

### Weinmannia (cont.)

Final of 26, 2005 (cont.)

La PTO (cont.)

### 1) PTC (cont.)

Stuttering, dyslexia, etc of  
youngster, poor comprehension,  
1/5 P/TD child highly conflict-  
ual, regard to loss of parent.

Stutterer, dyslexia: child goes  
to school, poor comprehension,  
1/5 P/TD child - reply incompre-  
hensible, the loss of parent

10/27/2013 (AC)

119 / 321, 387 (E45)

10/27, 223 (CC)  
11/13, 481 (CC)

(SMB) Sonderfahrt / bei

09/17/33, 501 (ai)

30/1/74, 201.1645

10/230, 187 (645)

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1999.07.25 10:00 AM  
by: John H. Smith, Editor of  
Journal of Health Politics, Policy and Law  
Published online: July 25, 2005

Mr. Dulhart, factory & carlton  
111/18 part 5 for  
different higher standard  
apparel, certified new, placed  
111/18 days by Dulhart, factory,  
Carlton

Mr. Dulhart, factory & carlton  
111/18 part 5 for  
different higher standard  
apparel, certified new, placed  
111/18 days by Dulhart, factory,  
Carlton

USPTO Auto-Poly Conf  
of Yang, Yang, Yang, Yang  
reg. # 7/15/2004, cert  
of issue payment and record  
of intent to file  
of Yang, Yang, Yang, Yang

USPTO Auto-Poly Conf  
of Yang, Yang, Yang, Yang  
reg. # 7/15/2004, cert  
of issue payment and record  
of intent to file  
of Yang, Yang, Yang, Yang

January 27, 2005

Thursday

Year PTO

Firm PTO  
 09/108, 010  
 09/152, 008  
 10/179, 011

10/910, 026  
 10/202, 151  
 09/078, 004  
 10/071, 002  
 09/219, 411  
 09/215, 045  
 10/041, 549  
 10/843, 705  
 09/022, 051  
 09/097, 364  
 09/419, 515  
 09/106, 070  
 10 PTO

Notice of Appeal PTO  
 Colorway Action  
 Advisory Action  
 Notice of Reconsideration  
 Notice of Reconsideration  
 Discussion from Board (Examiner)  
 Notice of Allowance  
 Non-Final Office Action  
 Non-Final Office Action  
 Non-Final Office Action  
 Final Office Action  
 Notice of Reconsideration (Board - MPEI)

10/113, 471 (OC)

Amend/Riply, (France, Kee, Parry)  
 File, Exhibit A - Replacement sheet  
 for Exhibit B - Rule 1  
 Unjustified posturing w/memo  
 ref & partially consider this entry  
 Exhibit C claim species of  
 1/449, 1  
 possible

Friday

Firm PTO  
 09/108, 010  
 09/152, 008  
 10/179, 011  
 10/219, 411  
 10/215, 045  
 10/041, 549  
 10/843, 705  
 09/022, 051  
 09/097, 364  
 09/419, 515  
 09/106, 070  
 10 PTO

Notice of Appeal PTO  
 Colorway Action  
 Advisory Action  
 Notice of Reconsideration  
 Notice of Reconsideration  
 Discussion from Board (Examiner)  
 Notice of Allowance  
 Non-Final Office Action  
 Non-Final Office Action  
 Non-Final Office Action  
 Final Office Action  
 Notice of Reconsideration (Board - MPEI)

Amend/Riply, (France, Kee, Parry)  
 File, Exhibit A - Replacement sheet  
 for Exhibit B - Rule 1  
 Unjustified posturing w/memo  
 ref & partially consider this entry  
 Exhibit C claim species of  
 1/449, 1  
 possible

January 29, 2005

Friday (cont.)

Monday

January 31, 2005

Job PTO (cont.)

Storm PTO

OKL 04 001 (iv)

Util applic w/ 2019 spec,  
4 sheets drawing, dec, Apple  
util spec, PTO 1595, assign  
TDS, PTO 1449, reply  
util trans, per know itz,  
postcard.

OKL 04 001 (v)

Util applic w/ 2019 spec,  
6 sheets drawing, dec, Apple  
util spec, PTO 1595, assign  
TDS, PTO 1449, reply, util trans  
util trans, postcard.

10/038, 491 (050)

RTN TFM/P, 4ma EOT, Substrate  
figure 7, copy of NT FM/P  
cert of trans, USPTO And reply  
confirm, fax confirm

February 1, 2005From PTO

10/090, 030  
09/905, 031  
10/036, 667

Notice Recordation  
Notice of Abandonment  
and Notice Advisory Action

WednesdayFrom PTO

10/290, 427  
10/059, 463

Not of Allow & Disavow due  
Decision in Section Dismissed

February 2, 2005

Not of Allow & Disavow due  
Decision in Section Dismissed

3.73(6) Stmt, Pow/Revocation Act  
cert of trans, fax confirm,  
USPTO auto-reply confirm

10/043, 705 (eus)

3.73(6) Stmt, Pow/Rev/  
cert of trans, fax confirm  
USPTO auto-reply confirm

10/924, 920 (eus)

3.73(6) Stmt, Pow/Revocation Act  
cert of trans, fax confirm,  
USPTO auto-reply confirm

RTNTMP, copy of NTFMP  
dec, fee trans, cert of trans  
fax confirm, USPTO auto-  
redu confirm.

10/966, 841 (eus)

34  
Wednesday (cont.)

To PTO (cont.)

February 2, 2005 (cont.)

Wednesday (cont.)

February 2, 2005 (cont.)

No PTO (cont.)

09/575, 470 (EUS)

Reply to office action  
w/must date of 12/10/04  
cert of trans, fax confirm  
USPTO Auto-Reply  
confirm.

11/023, 953 (EUS)

IDS, PTO 1449, trans,  
cert of trans, fax confirm,  
USPTO Auto-Reply  
confirm.

09/575, 470 (EUS)

IDS, PTO 1449, Rep, trans,  
cert of mail, fax confirm,  
USPTO Auto-Reply confirm

10/041, 549 (EUS)

Request withdrawal of  
holding of abandonment w/  
copy of date stamp cd  
abandoned small postcard  
big field office

E. Reply cert of trans,  
fax confirm, USPTO Auto-Reply  
confirm

10/045, 880 (EUS) Request withdrawal of  
holding of abandonment  
w/ copy of USPTO Auto-Reply  
copy, Clean the Payment  
above, Clean the Shared red

Yield 9/17/2004, cert of trans,  
fax confirm, USPTO Auto-Reply

10/030, 787 (EUS)

Petition to withdraw from  
Jones, RCC, IDS, PTO 1449,  
cert of trans, fax confirm,  
USPTO Auto-Reply confirm

09/564, 876 (EUS)

Petition to withdraw from  
Jones, RCC, IDS, PTO 1449,  
cert of trans, fax confirm,  
USPTO Auto-Reply confirm

08/751, 668 (EUS)

Atlas Lingerie, cert of  
trans, fax confirm,  
USPTO Auto-Reply confirm  
→ submission of new pos  
copy of doc from parent applies,  
copy of doc from parent applies,  
3:73 blank, prior/here,

copy of this on 1-17 from  
parent, trans, cert of trans,  
fax confirm, USPTO Auto-Reply  
confirm

February 3, 2005

Friday

From PTO

10/097, 868  
Official Notice of Non-Action  
Official Notice of Disposition

10/392, 256  
10/900, 335  
10/900, 331  
10/456, 358

States Reply for  
Notice of Recordation  
Notice of Recordation  
Non-Action Notice (from  
State of Maine)

10/097 to PTO

10/449, 252 (MVA/BS)

Close the payment  
Shane, Hand, Sub of 10  
Lts, 5 Sheets FD  
3/2 Amend, cert of  
Shane, York Company  
US PTO Sub-Easy  
Copyrim

February 4, 2005

Friday

From PTO

10/097, 868  
69/840, 360

February 7, 2016TuesdayFrom PTO11/04/14, 462  
09/15/14, 503Return Postcard  
Notice of Appealable Action11/04/14, 420  
10/19/14, 668  
10/07/14, 275  
10/07/14, 802  
10/07/14, 592  
09/19/14, 592  
09/15/14, 876Return Postcard  
Notice of Appealable Action  
Non-Statute Office Action  
Decision on Petition to Withdraw  
(Dismissed) via faxReturn Postcard  
Notice of Substitution (and)  
Notice of Appealable Action  
Notice of Appealable Action  
Non-Statute Office Action  
Decision on Petition to Withdraw  
(Dismissed) via faxIn PTO09/15/14, 321 (OC) - Appeal Brief, (Fees & fee  
trans) by postcard filed  
1/31/2015 by Marcy, e  
bridgeFebruary 8, 2016

Wednesday

Item PTC

February 9, 2005

Wednesday (cont.)

February 9, 2005 (cont.)

- 09/59, 403  
Notice of the Change Request  
Due in Patent with Patent  
(Priority)
- 10/657, 328  
Notice of Allowance & Issue Date  
Non Final Office Action  
Non Final Office Action  
Official Published Patent  
00/560, 051
- 11/026, 216 (ac)  
Amend, (Trans & fee trans)  
filed, cert of mail filed  
2/2/2005 by Ditharony  
& Carlson
- 09/223, 400 (ac)  
Notice of Appeal, cost of  
mail filed 1/16/2005  
by Ditharony & Carlson
- 10/500, 394 (ac)  
Amend / reply / (Trans &  
fee trans), etc, cost of mail  
filed 2/4/2005 by Ditharony  
& Carlson
- 10/302, 159 (ac)  
PCT, Inv EOT, Amend  
filed 2/2/2005 by  
Kearny & Snyder
- 09/659, 337 (ac)  
Appeal Brief, Trans,  
fee Trans, cost of mail  
filed 2/3/2005 by  
Ditharony & Carlson
- 09/678, 084 (ac)  
Notice of Appeal, cost of  
mail filed 2/3/2005  
by Ditharony & Carlson
- 10/033, 616 (ac)  
Amend / reply, (Trans & fee  
trans), etc, cost of mail  
filed 1/26/2005 by  
Ditharony & Carlson

do PTC (cont.)

Thursday

From PTO

February 10, 2015

109/421, 473  
Notice of Abandonment

11/017, 566  
10/230, 707  
10/358, 711  
10/440, 597  
10/115, 255  
10/404, 104

To PTO

10/036, 667 (DC)

RCE, procedural, filed by  
Hawley & Hodges on 2/7/2015

Friday

From PTO

February 11, 2015

Filing Dept  
Decision on Motion Withdrawn  
(Dropped)  
Decision on Petition (Waiver  
of above inventor) (Granted)  
Waiver of abandonment  
Non-Final Office Action  
Non-Final Office Action

To PTO

10/036, 667 (DC)

Waiver of abandonment on 2/7/2015

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February 15, 2005

From etc

Tuesday

Old County

February 14, 2015

09/033, 626  
09/070, 084  
10/053, 616  
10/070, 323  
11/034, 699

No PTO

Tuesday (cont.)

From PTO (cont.)

February 15, 2005 (cont.)

Wednesday

February 16, 2005

From PTO

10/107, 197

Notice of Allowance and

To PTO

CAL05001 (ac)

Util appl w/ 31 page, 12 sheet FD,  
IDS, PRO 1449, dec, applic date  
sheet, PRO 1515, assign,  
help, util (Kanack, Karr)<sup>llc</sup>,  
postcard, filed 2/9/2005  
by Marley E. Snyder

RIC04020 (cc)

Util applic w/ 19 pg, 5 sheet  
FD, dec, applic date sheet  
PRO 1595, assign, util (Kanack,  
Karr) llc, cert of express  
mail, filed 2/9/2005 by  
Ditharry & Carlson

11/034, 699 (ac)

Amend / (Kanack, Karr) llc,  
cert of mail, filed by  
Ditharry & Carlson on  
2/9/2005

February 17, 2005FridayThom PTO

10/903, 590  
10/944, 253  
11/623, 953  
02/703, 745  
03/036, 509

Notice of Appeal Pub  
Notice of Appeal Pub  
Filing Receipt  
Notice of Abandonment  
Final Office Action

11/052, 848  
08/177, 847

Return Postcard  
Notice of Non-Recordation

20 PTO

08/922, 387 (ac)

Amend/Reply, (Trans & few Trans).  
by  
Postcard, filed 2/15/2005 by  
Kamley & Becker

10/702, 190 (ac)

Amend/Reply, (Trans close,  
13x affidavit of single deposition  
(Trans & few Trans). by, art of  
mail, filed 2/14/2005 by  
Detthwary & Carlson

10/033, 043 (ac)

Amend/Reply, (Trans & fee  
Trans) by, cert of mail,  
filed 2/15/2005 by  
Detthwary & Carlson

10/759, 406 (ac)

Corrected D701595, copy &  
Notice of Record w/correction  
noted, by mail, filed  
2/15/2005

09/076, 936 (050/earns)

Deneice Pay Tracy 3/2 Amend,  
Sub of FO 08, 15 addrs, 17 F.P. Request  
for Consideration of Previously filed L.D.S.  
Trans 1st et trans last 10 min.

<u>February 18, 2005</u>	<u>Friday</u>	<u>Thom PTO</u>
10/903, 590 10/944, 253 11/623, 953 02/703, 745 03/036, 509	Notice of Appeal Pub Notice of Appeal Pub Filing Receipt Notice of Abandonment Final Office Action	11/052, 848 08/177, 847
		Return Postcard Notice of Non-Recordation
		20 PTO
		08/922, 387 (ac)
		Amend/Reply, (Trans & few Trans). by Postcard, filed 2/15/2005 by Kamley & Becker
		10/702, 190 (ac)
		Amend/Reply, (Trans close, 13x affidavit of single deposition (Trans & few Trans). by, art of mail, filed 2/14/2005 by Detthwary & Carlson
		10/033, 043 (ac)
		Amend/Reply, (Trans & fee Trans) by, cert of mail, filed 2/15/2005 by Detthwary & Carlson
		10/759, 406 (ac)
		Corrected D701595, copy & Notice of Record w/correction noted, by mail, filed 2/15/2005
		09/076, 936 (050/earns)
		Deneice Pay Tracy 3/2 Amend, Sub of FO 08, 15 addrs, 17 F.P. Request for Consideration of Previously filed L.D.S. Trans 1st et trans last 10 min.

50  
Friday (cont.)

To PTC (cont.) February 19, 2005 (cont.)

Monday

February 21, 2005

FEDERAL HOLIDAY  
COMPANY HOLIDAY

09/575, 469 (FAM/MWJ/ess) Close file Pay Trans,  
Hans, Cert & Deed,  
Pay confirm, USP TO  
Auto-Reply confirm

09/416, 101 (FAM/MWJ/ess)

States Emergency, Eng  
4 annual papers orig.  
filed 10/14/2005, Cpy  
of states emergency filed  
10/14/2005, Cert of Hans  
Pay confirm, USP TO  
Auto-Reply confirm

09/564, 876 (QTA)

Response to demand  
Return to W/Hillard from  
Close copy of Peletier &  
entitlement from same papers  
orig filed 4/6/2005  
Cert of Hans, Eng  
confirm

09/783, 402 (FAM/MWJ/ess)

Close file Paymet  
Hans, Hans, Deed  
Conciliation of fees  
Previously filed TPS  
Cert of Hans, Eng  
Confirm, USP TO  
Auto-Reply confirm

Tuesday

February 22, 2005

Tuesday (cont.)

February 22, 2005 (cont.)

From PTO

To PTO (cont.)

10/109, 375 (EUS)

IDS, PTO 1449, resp, trans,  
cert of trans, fax confirm,  
USPTO Auto - Reply confirm

Re PTO

09/111, 834 (EUS)

Request for corrected  
notice of recordation, copy  
of notice previously  
mailed, fax confirm  
USPTO Auto - Reply confirm

09/136, 796 (EUS)

IDS, PTO 1449, trans, resp,  
trans, cert of mail, postcard

09/179, 822 (EUS)

IDS, PTO 1449, resp,  
trans, cert of mail,  
postcard

10/016, 114 (EUS)

IDS, PTO 1449, resp, trans,  
cert of mail, postcard

Wednesday February 23, 2005

From PTO

10/29/05, 786  
07/5/04, 876  
10/11/05, 939  
10/3/05, 859  
09/4/05, 6922  
09/15/05, 403

Notice of Abandonment  
Decision on Motion to Dismiss  
i Shantel  
Final Office Action  
Non-Final Office Action  
Official Fiduciary Statement

39/154, 695 (eus)

States attorney w/copied  
of pattern paper & conform  
orig fil'd 09/20/04, cert of  
Lebra, fax confirm  
IDS, PTO 1449, reply, trans,  
cert of trans, fax confirm,  
USPTO auto-reply confirm

39/178, 106 (eus)

IDS, PTO 1449, reply, trans,  
cert of trans, fax confirm

To PTO

10/4/05, 315 (Fam/pus) Show fee pay trans, request  
for consideration of previously  
submitted IDS, trans, cert  
of trans, fax confirm, USPTO  
auto-reply confirm

60/000, 655 (eus) Bill to hold filing envelope  
to process application/cert of  
trans, fax, fax confirm,  
USPTO auto-reply confirm

Wednesday (Cont.)

February 23, 2005 (cont.)

No PTO (cont.)

39/154, 695 (eus)

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of pattern paper & conform  
orig fil'd 09/20/04, cert of  
Lebra, fax confirm  
IDS, PTO 1449, reply, trans,  
cert of trans, fax confirm,  
USPTO auto-reply confirm

39/178, 106 (eus)

IDS, PTO 1449, reply, trans,  
cert of trans, fax confirm

To PTO

10/4/05, 315 (Fam/pus) Show fee pay trans, request  
for consideration of previously  
submitted IDS, trans, cert  
of trans, fax confirm, USPTO  
auto-reply confirm

60/000, 655 (eus) Bill to hold filing envelope  
to process application/cert of  
trans, fax, fax confirm,  
USPTO auto-reply confirm

Thursday

February 24, 2005

Friday

February 25, 2005

From PTO

57

From PTO

11/057, 275  
11/026, 210  
10/325, 839

Return Postcard  
Filing Receipt  
Decision on Petition to Correct  
 Non-Compliance (Standard)

09/452, 957  
08/575, 433  
09/370, 504  
10/040, 074  
10/051, 100

Notice of Abandonment  
Non-Final Office Action  
Non-Final Office Action  
Non-Final Office Action  
Non-Final Office Action

In PTO

In PTO

10/786, 290(AC) Amend./reject, Name/for filing  
Re: postcard filed 2/14/2005  
by: Stanley E. Brugler

Monday February 28, 2005 Tuesday March 1, 2005

From PTO

From PTO

10/121, 472 Notice of Recordation (receipt)

09/950, 025  
10/889, 002  
10/953, 022

Non-Intel. Oppn. Action  
Notice of Appeal. Pet.  
Notice of Appeal. Pet.

10/121, 472 (EUS)

Do PTO

10/884, 690 (EUS)

Do PTO

c-IDS, p101449, USPTO  
electronic confirm

10/121, 472 (EUS)

10/121, 472 (EUS)

c-IDS, pro1449, USPTO

confirms recpt; record

cert of name change from

WCOM to MCI (electronic);

USPTO electronic confirmation

recpt

c-IDS, p101449, USPTO

electronic confirm

10/121, 472 (EUS)

10/121, 472 (EUS)

c-IDS, pro1449, USPTO

confirms recpt; record

cert of name change from

WCOM to MCI (electronic);

USPTO electronic confirmation

recpt

c-IDS, p101449, USPTO

electronic confirm

10/121, 472 (EUS)

petition under 1.78(d)

(certification of ownership)

cert of owner, fax copies

USPTO rule - reply

confirm

10/121, 472 (EUS)

petition under 1.78(d)

(certification of ownership)

cert of owner, fax copies

USPTO rule - reply

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10/121, 472 (EUS)

petition under 1.78(d)

(certification of ownership)

cert of owner, fax copies

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10/121, 472 (EUS)

petition under 1.78(d)

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cert of owner, fax copies

USPTO rule - reply

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10/121, 472 (EUS)

petition under 1.78(d)

(certification of ownership)

cert of owner, fax copies

USPTO rule - reply

confirm



To PTO (cont.)

From PTO

10/500, 009 (EUS)	Request for certified copy of application filed (11), fax confirm	09/436, 794 09/779, 092 10/971, 811 09/409, 500c	Return Postcard Return Postcard Notice of Recordation (via fax) Notice of Recordation (via fax) (conclusive MCIN)
10/024, 202 (EUS)	Statued Correspondence, cert of trans, fax confirm, USPTO Auto-Reply confirm, e-IDS P101449, USPTO electronic confirm	09/469, 500c 09/469, 500c 09/469, 500c 09/469, 500c	Notice of Recordation (via fax) (from MCIN → WCOM) Notice of Recordation (via fax) (from WCOM → MCI, Inc.)
10/036, 667 (EUS)	e-IDS, P101449, USPTO electronic confirm	09/ PTO	
09/168, 070 (EUS)	e-IDS, P101449, USPTO electronic confirm	11/016, 159 (EUS)	IDS, P101449, trans, cert of trans, fax confirm, USPTO Auto-Reply confirm fax confirm, USPTO Auto-Reply confirm
		11/034, 699 (EUS)	IDS, P101449, trans, cert of trans, fax confirm, USPTO Auto-Reply confirm
		11/036, 314 (EUS)	IDS, P101449, trans, cert of trans, fax confirm, USPTO Auto-Reply confirm
		10/979, 811 (EUS)	P101545, assign, filed electronically
		09/469, 500c (EUS)	→ Record and file name (name from previous transaction from MCIN → WCOM) electronically P101595, filed corrective notification using copy by agreement for filer back to MCIN, file electronically

March 3, 2005 (cont.)

Friday

March 4, 2005

65

From PTO

To PTO (cont.)

10/059, 463 (eus) Received 1.476) Petition  
cert of trans, fax confirmation  
USPTO Auto -Reply confirm

10/070, 323 Litigation Action  
09/8603, 456 Ymc Comm Litigation Order  
of IDS

10/071, 849 File Comm w/ Interview  
Summary regarding issuance  
of IDS

10/074, 323 Litigation Action  
09/8603, 456 Ymc Comm Litigation Order  
of IDS

10/075, 071 Notice of Appeal Put  
10/077, 753 Notice of Appeal Put

10/079, 609 and Petition for Filing Rept  
Decision on 1.471(a) Petition (Granted)

11/034, 699  
10/060, 609

10/078, 348 Non-Simple Office Action  
10/0851, 974 Non-Simple Office Action

09/469, 506 (eus) Petr/Power of attorney, 3.13 (b)  
Absent, cert of trans, fax confirm  
USPTO Auto -Reply confirm

10 PTO

10/079, 911 (eus) Prelim Amend, cert w/ trans,  
fax confirmation, USPTO Auto -Reply  
Confirm

09/718, 068 (ac) Amend/faxing. (trans & fax  
trans) bby, placed, filed  
2/28/2005 by Jlettry E.  
Dwyer

66

Monday

March 7, 2005

From PTO

11/041, 402  
 10/013, 777  
 10/826, 114  
 60/655, 911  
 10/922, 131  
 09/721, 590

Filing Rept  
 Notice of Recordation (via fax)  
 Return Postcard  
 Return Postcard  
 Notice of Recordation  
 Mail 312 & IDS Communc.

Tuesday

March 8, 2005<sup>67</sup>

From PTO

11/064, 973  
 11/041, 420  
 09/206, 844  
 08/924, 928

Returns Postcard  
 Filing Rept  
 Notice of Abandonment/  
 Counterclaim Summary  
 Suppl. Notice of Allow.

To PTO

10/013, 777 (EUS)

PTO 1595 assign, electronic  
Confirmation

09/768, 069 (OC)

Answer/reply, (Trans & fee  
Trans) Mr., postcard filed  
2/28/2005 by Kerriy E. Snyder

RIC05001 (OC)

Will apply w/ 23 pg/rep,  
5 streets charge, dec, PTO  
1595 assign, applic data  
sheet, IDS, PTO 1479 reps,  
will (Trans & fee Trans) Mr.,  
postcard, filed 2/25/2005  
by Kerriy E. Snyder

10/699, 823 (OC)

Answer/reply, (Trans & fee  
Trans) Mr., postcard filed  
by Kerriy E. Snyder on  
2/28/2005

RIC05002 PR (OC)

Pravis applic w/ 40 sheets  
of 24 cc, 3 streets charge,  
applic data sheet prived  
Trans & fee Trans) sheet, plus  
2/25/2005 by Kerriy E.  
Snyder

110

Wednesday

March 9, 2005

From PTO

09/43, 845

Closure Notification

10/786, 248

Advisory Action

08/987, 849

Misc Commun Regarding  
Consideration of ICS

09/637, 558

Non-final office action

09/397, 578

Notice of allowance, Issue fee due

10/702, 190

Return Postcard (from Keith)

11/034, 699

Return Postcard (from Keith)

10/023, 043

Return Postcard (from Keith)

10/800, 344

Return Postcard (from Keith)

11/054, 008

Return Postcard (from Keith)

09/983, 690

Notice of Recordation (from Keith)

10/016, 111

Notice of Recordation (from Keith)

To PTO

09/075, 003 (OC)

Amend/Reply, (trans & fee  
trans) ltr, cert of mail, filed  
3/3/2005 by Detthavong, E Carlson

10/385, 229

09/983, 690 (OC)

Amend/Reply, (trans & fee trans)  
ltr, cert of mail, filed 3/28/2005  
by Detthavong, E Carlson

09/123, 109 (OC)

Amend/Reply, (trans & fee  
trans) ltr, cert of mail, filed  
3/2/2005 by Detthavong, E Carlson

Wednesday (cont.)

To PTO (cont.)

10/013, 777 (OC)

Amend/Reply, (trans & fee  
trans) ltr, filed 3/1/2005  
by Detthavong, E Carlson

SKY05001 (OC)

CIP applic w/ 36 pp spec, 11  
sheets draw, dec, applic  
data sheet, PTO 1595, assign,  
util (trans & fees trans) ltr,  
cert of express mail, filed  
2/25/2005 by Detthavong  
& Carlson

Serial No.: Docket: RIC-96-161

Filing Date: 12/31/97 Attorney: Deborah Miller

Applicant(s): Hayes et al

Title: System and Method for Establishing a Virtual Circuit in an ATM Network

The following was mailed on the date indicated on the Certificate of Mailing. The actual date of receipt in the U.S.P.T.O. is as of the date stamped hereon:

Utility Patent: 27 pgs of specification (w/cover & abstract)

5 sheet (s) of 5 figures of informal drawings

Certificate of Mailing/Express Mail EM145302105US

**PLEASE DATE STAMP AND RETURN POSTCARD**  
[Date of Mailing: December 31, 1997]

MCI Ref # RIC 96 161

Date 12/31/97

Docketed

Expense List

Log Book

Amount

- 101 Filing Fee
- 102 Extra ind. claims
- 103 Extra claims
- 104 Multiple Dependent claims
- 105 Surcharge NTFMP
- 114 Provisional Filing Fee
- 115 Extension for response 1 month
- 116 Extension for response 2 months
- 117 Extension for response 3 months
- 118 extension for response 4 months
- 119 Notice of Appeal
- 123 Petition for Provisional Application
- 126 Submission of IDS
- 142 Utility Issue Fee

Serial No.: Docket: RIC-96-161

Filing Date: 12/31/97 Attorney: Deborah Miller

pp.

or other

time

Applicant(s): Hayes et al

Title: System and Method for Establishing a Virtual Circuit in an ATM Network

The following was mailed on the date indicated on the Certificate of Mailing. The actual date of receipt in the U.S.P.T.O. is as of the date stamped hereon:

Utility Patent: 27 pgs of specification (w/cover & abstract)

5 sheet (s) of 5 figures of informal drawings

Certificate of Mailing/Express Mail EM145302105US

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09/002187



12/31/97

**P PLEASE DATE STAMP AND RETURN POSTCARD**  
[Date of Mailing: December 31, 1997]

**PATENT APPLICATION TRANSMITTAL**

**ASSISTANT COMMISSIONER FOR PATENTS**  
**Box Patent Applications**  
**Washington, D.C. 20231**

Transmitted herewith for filing is the Utility Patent Application of:

**Inventor(s):** David S. Hayes  
 Randy Haberman  
 Steve Herlocher

**Enclosed are:** Utility Patent: 27 pgs of specification (w/cover & abstract)  
 5 sheet (s) of 5 figures of informal drawings  
 Certificate of Mailing/Express Mail EM145302105US  
 Postcards

**Title:**

System and Method for Establishing a Virtual Circuit in an ATM Network

**The Filing Fee has been calculated below:**

	Number Filed	Number Extra	Rate	Fee
Basic Fee			\$790.00	\$790.00
Total Claims	29 - 20 =	9	x \$22.00	\$198.00
Independent Claims	4 - 3 =	1	x \$78.00	\$82.00
Multiple Dependent Claim Present			\$250.00	
Assignment Recordation Fee			\$40.00	
<b>Total Filing Fee</b>				<b>\$1,070.00</b>

It is respectfully requested that the attached post card be stamped with the filing date and unofficial application number of these documents and returned to the addressee as soon as possible.

This patent application is being submitted under 37 C.F.R. Section 53(b) without filing fee.  
 I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application listed herein: \_\_\_\_\_

I hereby certify that this correspondence is being deposited with the United States Postal Service as "Express Mail" in an envelope addressed to: Box Patent Application, Assistant Commissioner for Patents, Washington D.C. 20231

Dated: 12/31/97  
 Express Mail Label No. EM145302105US

By: Carolyn McRae

Deborah Miller 12/31/97  
 Deborah Miller  
 Attorney for applicant(s)  
 Reg. No. 37,679

Send all correspondence to:  
 Technology Department  
 MCI COMMUNICATIONS CORPORATION  
 1133 19TH STREET, NW  
 WASHINGTON DC20036

# **System and Method for Establishing a Virtual Circuit in an ATM Network**

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**Inventors:** David S. Hayes  
Randy Haberman  
Steve Herlocher

## ***Background of the Invention***

### ***Field of the Invention***

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The present invention is directed to a telecommunications network and, in particular, to a system and method for establishing a virtual circuit in an ATM network.

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Computer networks often are designed to connect “client” systems with “server” systems. A client is a device and/or software that requests information from a server. A client may be a computer system or process, for example. The server is typically a shared computer in which data is stored and from which data is distributed. A server may be a computer program, a database system, or a computer system, for example. The server provides a service to clients utilizing a “client-server model.”

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According to the client-server model, the client connects to the server, sends a request (or query) to the server, and waits for a response from the server. The client may request that the server perform a computation, retrieve a file, or search a database for a particular entry, for example. It is not uncommon for the client to subsequently translate the server’s response into a format that a human can understand.

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Computer networks are often designed with multiple servers to increase network reliability. Those skilled in the art will recognize that server redundancy decreases the disruption felt by the network when one or more servers fail. When failure does occur, client queries can be redirected to alternate servers capable of handling the queries.

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Many networks today employ an asynchronous transfer mode (ATM) scheme for network communication. ATM networks are particularly useful in today's multi-vendor environment where applications have different performance, quality, and business requirements, but which utilize the same computer, multiplexer, router, switch, and/or network.

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Routing of queries in an ATM network is based on virtual circuit routing. A virtual circuit is a circuit that appears to the client and to the server to be a dedicated point-to-point circuit. An ATM network must establish a path from the client to the server (*i.e.*, the virtual circuit) before client / server communication can begin. The ATM network establishes a virtual circuit after receiving a request for connection from a client. The request for connection includes an address which identifies the desired server to the ATM network. Through a private network-to-network interface (PNNI) routing process, the ATM network selects the best path through the network from the requesting client to the desired server. These conventional ATM routing techniques are well known to those skilled in the art.

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Conventional ATM routing performs poorly where the desired server has failed or is otherwise unavailable. Queries must be routed to a new server capable of handling the query. Some clients may not be capable of selecting a new server—these clients may not have their queries answered. Other clients may be capable of selecting a new server, but doing so requires additional time and the

client must maintain a list of all currently available servers and their addresses. What is needed, therefore, is a system and method for establishing a virtual circuit in an ATM network to any one of a set of suitable servers without the client having to know either the status or address of suitable servers.

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### *Summary of the Invention*

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The present invention is directed to a system and method for establishing a virtual circuit from a client through an ATM network to a server, where the server is selected from a group of servers. The client requesting the virtual circuit need not know the individual address of any of the servers in the group, only the address of the group itself. Selection of a particular server is transparent to the client—the ATM network is responsible for selecting a server from the group identified by the client.

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One advantage of the present invention is that clients are not responsible for selecting an alternate server in the event of server failure. According to the present invention, routing decisions are made at the network level rather than by the client. When a request for connection is received from a client, a virtual circuit is established between the client and a server from the selected functional group which is known to be operational. The client is therefore relieved of the responsibility of handling failed requests for connection.

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Another feature of the present invention is that connections to servers within a particular functional group may be distributed according to a desired criteria. In a preferred embodiment, connections may be distributed according to the processing load carried by each server in a functional group—servers receive requests for connection at a rate inversely proportional to their current processing load. This allows queries directed to a particular functional group to be

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distributed to servers able to respond most quickly, thereby maximizing the performance of the ATM network.

Yet another feature of the present invention is that the client need not know the address of each server in the ATM network. The client need only know the address of a functional group of servers. The addresses of individual servers within each functional group may therefore be modified without requiring that new addresses be stored at each client.

Further features and advantages of the invention, as well as the structure and operation of various embodiments of the invention, are described in detail below with reference to the accompanying figures. In the drawings, like reference numbers generally indicate identical, functionally similar, and/or structurally similar elements. The drawing in which an element first appears is indicated by the leftmost digit(s) in the corresponding reference number.

### *Brief Description of the Figures*

The present invention will be described with reference to the accompanying drawings, wherein:

FIG. 1 is a block diagram of a network environment within which the present invention is used;

FIG. 2 is a block diagram illustrating a network environment in more detail;

FIG. 3 is a block diagram illustrating the software components of a multiple destination routing controller;

FIG. 4 is a flowchart of the operation of a preferred embodiment of the invention; and

FIG. 5 is a block diagram of a computer system representing a preferred implementation of a multiple destination routing controller.

### ***Detailed Description of the Preferred Embodiments***

#### **I. Overview of the Invention**

5       The present invention is directed to a system and method for establishing a virtual circuit in an ATM network. According to the present invention, a client transmits a request for a virtual circuit (*i.e.*, a request for connection) to an ATM network. The request specifies an address identifying a group of servers which are all capable of providing a desired function (*i.e.*, a functional group).

10      Upon receiving the request for connection, the network of the present invention selects a suitable server from the identified functional group. Importantly, the selection of a particular server is made at the network level, rather than by the client. The network then creates a virtual circuit connecting the client to the selected server. Communication between the client and server may 15 then proceed according to standard ATM techniques.

#### **II. ATM Network Environment**

The present invention is suitable for operation in an ATM network environment. As is well known to those skilled in the art, ATM networks use various communication protocols, depending generally upon the type of devices 20 which are communicating: network-to-network interface (NNI) signaling protocol is used between ATM switches, user-to-network interface (UNI) signaling protocol is used between clients/servers and the ATM network, and

private-network-to-network interface (PNNI) routing requests are used by ATM switches to determine proper routing for the virtual circuit.

The present invention is described herein in the context of an ATM network environment. It should be understood, however, that the present invention is not limited to this environment. Those skilled in the art will recognize that the present invention can operate within other network environments following protocols similar to the ATM network protocol, such as a TCP/IP network protocol.

FIG. 1 is a block diagram of an example network environment 100 suitable for implementation of a preferred embodiment of the present invention. Network environment 100 includes an ATM network 102, clients 104 (indicated by reference numbers 104A through 104C), and servers 106 (indicated by references numbers 106A through 106C). Clients 104 and servers 106 communicate bi-directionally with ATM network 102. This example network environment is now described.

Clients 104 communicate with servers 106 via ATM network 102. According to the present invention, clients 104 and servers 106 interact in a conventional client/server relationship well known to those skilled in the art. However, ATM network 102 does not recognize a difference between clients 104 and servers 106. ATM network 102 is concerned with the transmission of data, without regard to which system is the "client" and which is the "server". Consequently, clients 104 and servers 106 are so designated to indicate their relationship to each other, but are interchangeable so far as ATM network 102 is concerned.

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As is known to those skilled in the art, clients **104** may contact a server **106** for many different purposes. Clients **104** and servers **106** may also be implemented in many different ways, so long as both are able to communicate via ATM network **102**. For example, client **104** represents a travel agent's airplane reservation system, and server **106** represents a central booking computer. Alternatively, client **104** represents a point-of-sale cash register, and server **106** represents a computer tasked with tracking inventory and sales. Alternatively still, client **104A** represents a gas pump with a credit card reader, and server **106** represents a credit checking computer.

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FIG. 2 is a more detailed illustration of network environment **100**. ATM network **102** includes ATM switches **202** interconnected by communication pathways **204**, and a multiple destination routing controller **206**.

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ATM switch **202** in a preferred embodiment is a conventional ATM switch. Alternatively, ATM switches **202** can be implemented using any network elements that are compatible with ATM technology, including NNI signaling protocol and PNNI routing protocol.

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Communication pathways **204** represent bidirectional point-to-point channels between clients **104**, servers **106**, and ATM switches **202**. Communication pathways **204** support UNI or NNI signaling protocol as appropriate. As is well known to those skilled in the art, communications between an ATM switch **202** and an end-user (*i.e.*, a client or server) conventionally follow a UNI signaling protocol. Conversely, communications between ATM switches **202** conventionally follow a NNI signaling protocol. Communication pathway **204** therefore represents a bidirectional communication link which supports the signaling protocol appropriate to the devices connected to the link.

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Multiple destination routing controller **206** is connected to the network of ATM switches **202** via one or more communication pathways **204**. FIG. 2 depicts a single communication pathway **204** between multiple destination routing controller **206** and ATM switch **202C**. However, those skilled in the art will recognize that multiple communication pathways **204** could be used to provide redundancy and enhanced network reliability. The operation of multiple destination routing controller **206** is described in detail below.

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### III. Conventional ATM Routing

Conventional ATM routing is now described in terms of a simple example. Referring to FIG. 1, assume in this example that client **104A** is a gas pump with a credit card reader that wishes to ask server **106A** “Is this credit card valid?” in response to customer’s request to purchase gas with a credit card.

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Communications between clients and servers via ATM network **102** may be analogized to a telephone call. Before any client/server communication can take place, client **104A** must establish a virtual circuit to server **106A**. In terms of the telephone call analogy, client **104A** calls server **106A** and server **106A** answers the call. In answering the call, server **106A** accepts the incoming virtual circuit and a communication path is established over which client **104A** and server **106A** can interact. Client **104A** can now make the query “Is this credit card valid?” for example, and server **106A** can answer the query.

Those skilled in the art will recognize that any end-user device (*e.g.*, client or server) can request a virtual circuit to any destination. In the context of the current invention, however, most virtual circuit requests come from client systems.

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With conventional ATM networks, clients **104** must know the ATM address of the server **106** with which they wish to connect. This characteristic is analogous to conventional telephony, wherein the calling party must know the telephone number of the called party. Further, no two end-users have the same ATM address. Servers and clients each have a unique ATM address. Accordingly, in order to request a virtual circuit between them, client **104A** specifies the ATM address of server **106A**.

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According to conventional PNNI routing, ATM network **102** selects the best route through ATM network **102** for a virtual circuit from client **104A** to server **106A**. Referring to FIG. 2, one possible route from client **104A** to server **106A** would be through ATM switches **202A** and **202B**. If, on the other hand, client **104A** wanted to establish a virtual circuit to server **106B**, then one possible route would be from client **104A** to ATM switch **202A** to ATM switch **202B** to server **106B**. Another route would be from client **104A** to ATM switch **202A** to ATM switch **202C** and to server **106B**. In either case, ATM network **102** uses the PNNI routing process to select the best route through ATM network **102** from client **104A** to server **106A** or to server **106B**.

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Conventional PNNI routing procedures associate ATM switches into “peer groups” in order to create a routing hierarchy. Peer groups typically contain only a few ATM switches. Large ATM networks are constructed by combining peer groups together into larger peer groups. The PNNI routing protocol organizes the peer groups into a layered hierarchy. The use of peer groups organized into multiple hierarchical levels is well known to those skilled in the art, and will not be discussed in detail herein.

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According to conventional ATM technology, one ATM switch in each peer group is designated the “peer group leader.” The peer group leader is

responsible for maintaining the topology of all ATM switches in its peer group. Additionally, the peer group leader also represents its peer group to higher layers in the routing hierarchy. If an ATM switch in a peer group receives a request for a virtual circuit and does not already know the correct route, the ATM switch asks the peer group leader to determine the route.

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Consider again the example described above wherein client **104A** wishes to establish a virtual circuit to server **106A**. Suppose that ATM switch **202C** is the peer group leader for a peer group consisting of ATM switch **202A**, ATM switch **202B**, and ATM switch **202C**. Client **104A** transmits to ATM switch **202A** a request for connection with server **106A**, including server **106A**'s ATM address. Suppose further that ATM switch **202A** does not already know a route for a virtual circuit from client **104A** to server **106A**. ATM switch **202A** asks peer group leader ATM switch **202C** to determine a route from client **104A** to server **106A**.

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A limitation of conventional ATM routing is that if server **106A** is not operational because of a failure, because of having been removed from service for routine maintenance or for some other reason, client **104A** is typically unaware of this status of server **106A**. If client **104A** is not capable of selecting a new server, then client **104A** may be unavailable to serve customers. That is, the gas pump credit card reader will be out of service, for example.

If, on the other hand, client **104A** is capable of selecting a new server, then client **104A** may do so. However, time is wasted between determining that server **106A** is unavailable and selecting the secondary server. In any event, client **104A** may not know the individual ATM address for the secondary server.

Selecting a new server may also be complicated by the fact that typically client 104A does not have a view of the current conditions in the entire ATM network. Client 104A generally does not have access to the dynamic status of the network. Knowing the status and ATM address of a particular secondary server at any given point in time would require the client to maintain an up-to-date listing of all currently available servers and their addresses. Status information could be distributed to client 104A, but this would increase the complexity and expense of client systems. Moreover, this distribution of the information would add to the load on ATM network 102. The extra load would diminish ATM network 102's capacity to carry queries.

#### IV. Functional Groups within an ATM Network

According to the present invention, client 104A sends to ATM network 102 a request for connection. The request for connection differs from a conventional request in that it specifies an address of a functional group of servers, rather than a particular individual server. ATM network 102 selects a server from the specified functional group and connects client 104A to that server. This is advantageous to client 104A because ATM network 102 has a better view of current network activity and status than client 104A. Accordingly, ATM network 102 can base a selection decision on factors not available to client 104A, such as the current processing load carried by each server. The following section provides further details related to server selection and routing.

According to the present invention, servers 106 are grouped according to the functions they perform. Each server 106 in a particular functional group must be able to service any request from a client 104 sent to the group. The present invention assumes that any operational server within a functional group may be selected to service a client query sent to that group. For example, several servers

may be grouped together to verify credit card purchases at gas pumps. Each server in the group must be able to process credit card queries sent to that group.

5           Each functional group is assigned a unique ATM address. For example, a group of servers validating credit cards may be assigned an ATM address of 0000.0000.0001. Similarly, a group of servers handling toll-free routing information may be assigned an ATM address of 0000.0000.0002. The ATM functional group addresses may be chosen arbitrarily and assigned at the convenience of an administrator of ATM network 102.

10          Each server in a functional group is configured to respond to the ATM functional group address. A single server may be included within more than one functional groups, so long as that server is capable of servicing client queries sent to each of the groups. Servers may therefore respond to two or more ATM addresses: their individual ATM address, and the address of each functional group to which they belong.

15          For example, referring to FIG. 2, suppose that server 106A has a device address of 0000.0000.0010, server 106B has a device address of 0000.0000.0020, and the functional group consisting of 106A and 106B has a functional group address of 0000.0000.0030. According to the present invention, server 106A responds to the address 0000.0000.0010 as well as to the address 0000.0000.0030. Likewise, server 106B responds to the address of 0000.0000.0020 as well as to the address of 000.0000.0030.

## V. Operation of Multiple Destination Routing Controller

The operation of multiple destination routing controller (MDRC) 206 will be now described with reference to FIG's 3 and 4. FIG. 3 is a block diagram 300 depicting the various software components of MDRC 206: an interface module 302, a routing module 304, a peer group leader module 308, and a server module 310. FIG. 4 is a flowchart 400 depicting the steps performed by ATM network 102, including MDRC 206, according to a preferred embodiment.

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In FIG. 3, each of these software components, or modules, represent a particular function performed by a computer under the control of computer software. Often the line between the functionality of one component and the next is arbitrarily drawn, and is described as such purely for purposes of convenience. For instance, a function described as being performed by server module 306 might equivalently be performed by interface module 302 or routing module 304. Those skilled in the art will note the importance of the function described, not the arbitrary grouping of functionality into software modules.

Those skilled in the art will recognize that creating software code based on the following functional descriptions is well within an ordinary level of skill. Those skilled in the art will also recognize that, depending upon the environment and the hardware used, different languages would be appropriate under different circumstances. Again, the choice of a particular language is well within the level of ordinary skill in the art.

Interface module 302 handles all communications between the various other software modules, and all communications outside MDRC 206. Here, interface module 302 provides the interface for communicating with ATM switch 202C. Interface module 302 is implemented as conventional input/output and

control routines. Interface module **302** is shown in FIG. 3 primarily for purposes of illustrative clarity—those skilled in the art will recognize that interface module **302** could have been omitted from FIG. 3, as these are functions performed by all software routines, and can be assumed to be part of any software implementation.

5           Peer group leader module **308** causes ATM network **102** to elect MDRC **206** as peer group leader. According to standard ATM technology, a peer group leader is elected for each peer group. This insures that all request for routing in that peer group are directed to MDRC **206**. In a preferred embodiment, peer group leader module **308** arranges to win this election by broadcasting an artificially higher preference for MDRC **206**. However, those skilled in the art will recognize that there are many alternate approaches to having MDRC **206** elected peer group leader.

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15           Another alternate approach is to manually configure ATM network **102**, assigning MDRC **206** as peer group leader. In this approach, peer group leader module **308** no longer is necessary to insure that MDRC **206** is elected peer group leader. However, those skilled in the art will recognize that other functions may still need to be performed according to ATM protocol, such as periodically broadcasting "keep-alive" packets to all members of the peer group.

20           Referring now to FIG. 4, flowchart **400** illustrates the operation of ATM network **102** according to a preferred embodiment of the present invention, including the operation of MDRC **206**. These steps will be described in the context of the example outlined above, where client **104A** wishes to contact a server capable of providing a particular service, such as authorizing a credit card purchase. For purposes of this example, assume that servers **106A** and **106B** are included within a functional group which provides this service. Assume that client **104A** has sent a request for connection to ATM switch **202A** specifying

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this functional group. Further assume that, prior to the request for connection being sent, peer group leader module **308** has caused MDRC **206** to be elected peer group leader of the peer group including ATM switches **202A**, **202B**, and **202C**.

5           In step **404**, ATM switch **202A** receives a request for connection from client **104A**, as mentioned above. Since the functional group address does not belong to any actual physical device, ATM switch **202A** cannot itself determine a route to establish a virtual circuit. Following conventional procedures of PNNI, in step **406** ATM switch **202A** sends a routing request to the peer group leader, which in this case is MDRC **206**, requesting a route to the functional group address.

10           15       Interface module **302** receives the routing request from ATM switch **202A**, via ATM switch **202C**. As peer group leader, MDRC **208** must handle all PNNI routing requests from the peer group, both those specifying a functional group address, and those specifying a conventional ATM address.

20           Routing module **304** determines routings through ATM network **102** according to conventional ATM technology. For instance, routing module **304** can determine a routing between client **104A** and server **106A**. When a routing request is received specifying a conventional ATM address, routing module **304** determines an appropriate routing, and returns the routing to the requesting ATM switch **202**, which then sets up a virtual circuit according to the routing.

25           However, routing requests which specify a functional group address are handled differently. Server module **310** maintains a list of the servers assigned to each functional group, including each server's individual ATM address. In a preferred embodiment, the network administrator provides this list to server

module **310**. Server module **310** also uses conventional techniques to automatically maintain this list by determining which of the servers are actually able to respond at any given moment. This list is updated periodically according to conventional techniques.

5           In step **408**, server module **310** consults the list of servers and selects a server to service client **104A** from the functional group specified in the routing request (and in the request for connection). Server module **310** can make this selection based on a variety of criteria, depending upon the particular network environment. For instance, the server may be selected based on proximity to the  
10 requesting client, network load, available server capacity, or other application-specific factors. However, server module **310** will not select a server which is known to be unreachable.

15           In step **410**, routing module **304** determines a route through ATM network **102**, from client **104A** to the server selected by server module **310**, in this case server **106A**. Again, this is a conventional function of PNNI routing. Routing module **304** need not deviate from conventional ATM practice. The computed route takes the form of an ATM designated transit list (DTL). As is well known to those skilled in the art, this is a list of ATM switches and communication pathways over which the new virtual circuit should be routed. The DTL is a  
20 standard PNNI message, well known to those skilled in the art. Referring to FIG. 2, an example route is from client **104A**, through ATM switches **202A** and **202B**, to server **106A**.

25           In step **412**, interface module **302** transmits the resulting route to ATM switch **202A** as a DTL. In step **414**, ATM switch **202A** creates a virtual circuit through the route specified in the DTL. The request for connection will arrive at the selected server, server **106A**, still bearing the ATM address of the functional

group. As stated above, according to the present invention each server must recognize its own ATM address as well as the ATM address of each functional group of which it is a part.

Now that a virtual circuit is established, client 104A may begin normal  
5 communications with server 106A in a conventional client/server manner.

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It is important to note that the virtual circuit need not flow through multiple destination routing controller 206. According to conventional PNNI routing procedures, a DTL need not include the peer group leader within the chosen route. As a result, the peer group leader does not have to perform the functions of an ATM switch. MDRC 206 may therefore be implemented as a general purpose computer without the special capabilities of an ATM switch.

## VI. Implementation of Multiple Destination Routing Controller

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In a preferred embodiment, multiple destination routing controller 206 is implemented as a general purpose computer system, described in detail below. In an alternate embodiment, multiple destination routing controller 206 is implemented using a special purpose computer system. In still another embodiment, the functions of multiple destination routing controller 206 are integrated into a conventional ATM switch, such as ATM switch 202. Those skilled in the art will recognize the various tradeoffs associated with each particular implementation.

Multiple destination routing controller 206 can be implemented using hardware, software, or a combination thereof and may be implemented as a computer system or other processing system. An example computer system 500 is shown in FIG. 5. Computer system 500 includes a communication bus, such

as communication bus 502, and one or more processors, such as processor 504. Processor 504 is connected to communication bus 502.

Computer system 500 also includes a main memory 506, preferably random access memory (RAM), and may also include a secondary memory 508. Secondary memory 508 may include, for example, a hard disk drive 510 and/or a removable storage device 512, representing a floppy disk drive, a magnetic tape drive, and optical disk drive, etc. Removable storage device 512 reads from and/or writes to a removable storage medium 514 in a well known manner. Removable storage medium 514 represents a floppy disk, magnetic tape, optical disk, etc., which is read from and written to by removable storage device 512. As will be appreciated, removable storage medium 514 includes a computer usable storage medium having stored therein computer software and/or data.

In alternate embodiments, secondary memory 508 may include other similar means for allowing computer programs or other instructions to be loaded into computer system 500. Such means can include, for example, a removable storage unit 522 and an interface 520. Examples of such can include a program cartridge and cartridge interface (such as that found in video game devices), a removable memory chip (such as an EPROM or PROM) and associated socket, and other removable storage units 522 and interfaces 520 which allow software and data to be transferred to computer system 500.

Computer system 500 includes a communications interface 524. Communications interface 524 allows software and data to be transferred between computer system 500 and the ATM network 102. Examples of communications interface 524 can include a modem, a network interface (such as an Ethernet card), a communications port, a PCMCIA slot and card, etc. Software and data transferred via communications interface 524 are in the form

of signals which can be electronic, electromagnetic, optical or other signals capable of being received by communications interface **524**. These signals are provided to communications interface via communications pathway **204**.

5           In this document, the terms "computer program medium" and "computer usable medium" are used to generally refer to media such as removable storage device **518** and hard disk installed in hard disk drive **510**. These computer program products are means for providing software to computer system **500**.

10          In an alternate embodiment, the invention is implemented using computer programs (or software). Computer programs (also called computer control logic) are stored in main memory **506** and/or secondary memory **508**. Computer programs can also be received via communications interface **524**. Such computer programs, when executed, enable the computer system **500** to perform the features of the present invention as discussed herein. In particular, 15       the computer programs, when executed, enable the processor **504** to perform the features of the present invention. Accordingly, such computer programs represent controllers of the computer system **500**.

20          In the embodiment where the invention is implemented using software, the software may be stored in a computer program product and loaded into computer system **500** using removable storage device **512**, hard drive **510** or communications interface **524**. The control logic (software), when executed by the processor **504**, causes the processor **504** to perform the functions of the invention as described herein.

25          In another embodiment, the invention is implemented primarily in hardware using, for example, hardware components such as application specific

integrated circuits (ASICs). Implementation of the hardware state machine so as to perform the functions described herein will be apparent to persons skilled in the relevant art(s).

5           In yet another embodiment, the invention is implemented using a combination of both hardware and software.

## VII. Conclusion

10           While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention.

***What Is Claimed Is:***

1        1. A method for establishing a virtual circuit from a client to one of a  
2        plurality of servers through a network, comprising the steps of:

3              (1) receiving a request for connection from a client, wherein said  
4        request specifies a functional group, and wherein said functional group includes  
5        a plurality of servers, each capable of servicing said client;

6              (2) selecting a server from said functional group;

7              (3) computing a route to said server; and

8              (4) establishing a virtual circuit from said client to said server via said  
9        route.

1        2. The method of claim 1, wherein said step of selecting a server further  
2        comprises selecting an operational server from said functional group which has  
3        the highest available computational power.

1        3. The method of claim 1, wherein said client is a telephone switching  
2        system.

1        4. The method of claim 1, wherein said network is an ATM network.

1        5. The method of claim 1, wherein said network is a TCP/IP network.

1        6. A system for establishing a virtual circuit from a client to one of a  
2        plurality of servers through a network, comprising:

3              an interface module coupled to receive a routing request from the  
4        network, wherein said routing request specifies a functional group and a client,  
5        and wherein said functional group includes a plurality of servers, each capable of  
6        servicing said client;

7           a server module configured to select a server from said functional group;  
8       and  
9           a routing module configured to determine a route from said client to said  
10      server through the network.

- 1       7.     The system of claim 6, wherein said network is an ATM network.
- 1       8.     The system of claim 7, wherein said system further comprises:  
2           a peer group leader module configured to cause the network to elect said  
3        system as a peer group leader.
- 1       9.     The system of claim 6, wherein said server module is configured to select  
2        an operational server from said functional group which has the highest available  
3        computational power.
- 1       10.    The system of claim 6, wherein said server module is further configured  
2        to maintain a list of functional groups within the network.
- 1       11.    The system of claim 6, wherein said client is a telephone switching  
2        system.
- 1       12.    The system of claim 7, wherein each of said plurality of servers responds  
2        to an ATM address for said functional group.
- 1       13.    The system of claim 6, wherein the network is a TCP/IP network.
- 1       14.    A computer program product comprising a computer useable medium  
2        having computer program logic stored therein, wherein said computer program  
3        logic comprises:

4           interface means for enabling a computer to receive a routing request from  
5        a network, wherein said routing request specifies a functional group and a client,  
6        and wherein said functional group includes a plurality of servers, each capable of  
7        servicing said client;

8           server means for enabling said computer to select a server from said  
9        functional group; and

10          routing means for enabling said computer to determine a route from said  
11        client to said server through said network.

1       15.   The computer program product of claim 14, wherein said network is an  
2        ATM network.

1       16.   The computer program product of claim 14, wherein said network is a  
2        TCP/IP network.

1       17.   The computer program product of claim 15, wherein said computer  
2        program logic further comprises:

3           a peer group leader means for enabling said computer to cause said ATM  
4        network to elect said system as a peer group leader.

1       18.   The computer program product of claim 14, wherein said server means  
2        enables said computer to select an operational server from said functional group  
3        which has the highest available computational power.

1       19.   The computer program product of claim 14, wherein said server means  
2        further enables said computer to maintain a list of functional groups within said  
3        network.

1       20. The computer program product of claim 14, wherein said client is a  
2       telephone switching system.

1       21. The computer program product of claim 15, wherein each of said plurality  
2       of servers responds to an ATM address for said functional group.

1       22. A computer, comprising:  
2              a processor;  
3              interface means for enabling said processor to receive a routing request  
4              from a network, wherein said routing request specifies a functional group and a  
5              client, and wherein said functional group includes a plurality of servers, each  
6              capable of servicing said client;  
7              server means for enabling said processor to select a server from said  
8              functional group; and  
9              routing means for enabling said processor to determine a route from said  
10             client to said server through said network.

1       23. The computer of claim 22, wherein said network is an ATM network.

1       24. The computer of claim 22, wherein said network is a TCP/IP network.

1       25. The computer of claim 23, wherein said computer further comprises:  
2              a peer group leader means for enabling said processor to cause said ATM  
3              network to elect said system as a peer group leader.

1       26. The computer of claim 22, wherein said server means enables said  
2              processor to select an operational server from said functional group which has the  
3              highest available computational power.

1       27. The computer of claim 22, wherein said server means further enables said  
2 processor to maintain a list of functional groups within said network.

1       28. The computer of claim 22, wherein said client is a telephone switching  
2 system.

1       29. The computer of claim 23, wherein each of said plurality of servers  
2 responds to an ATM address for said functional group.

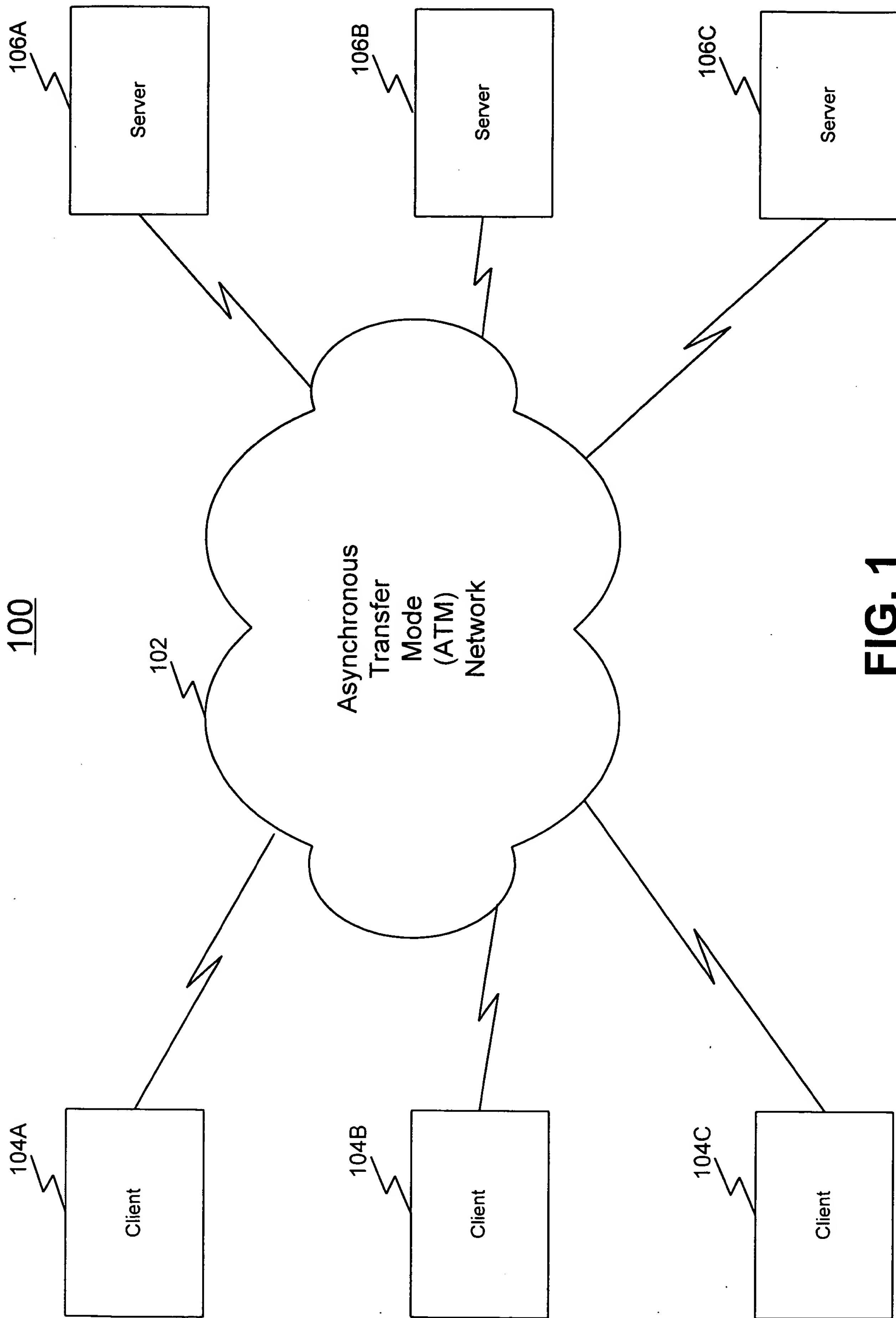
## **System and Method for an Origination to a Plurality of Destinations over an ATM Network**

### ***Abstract***

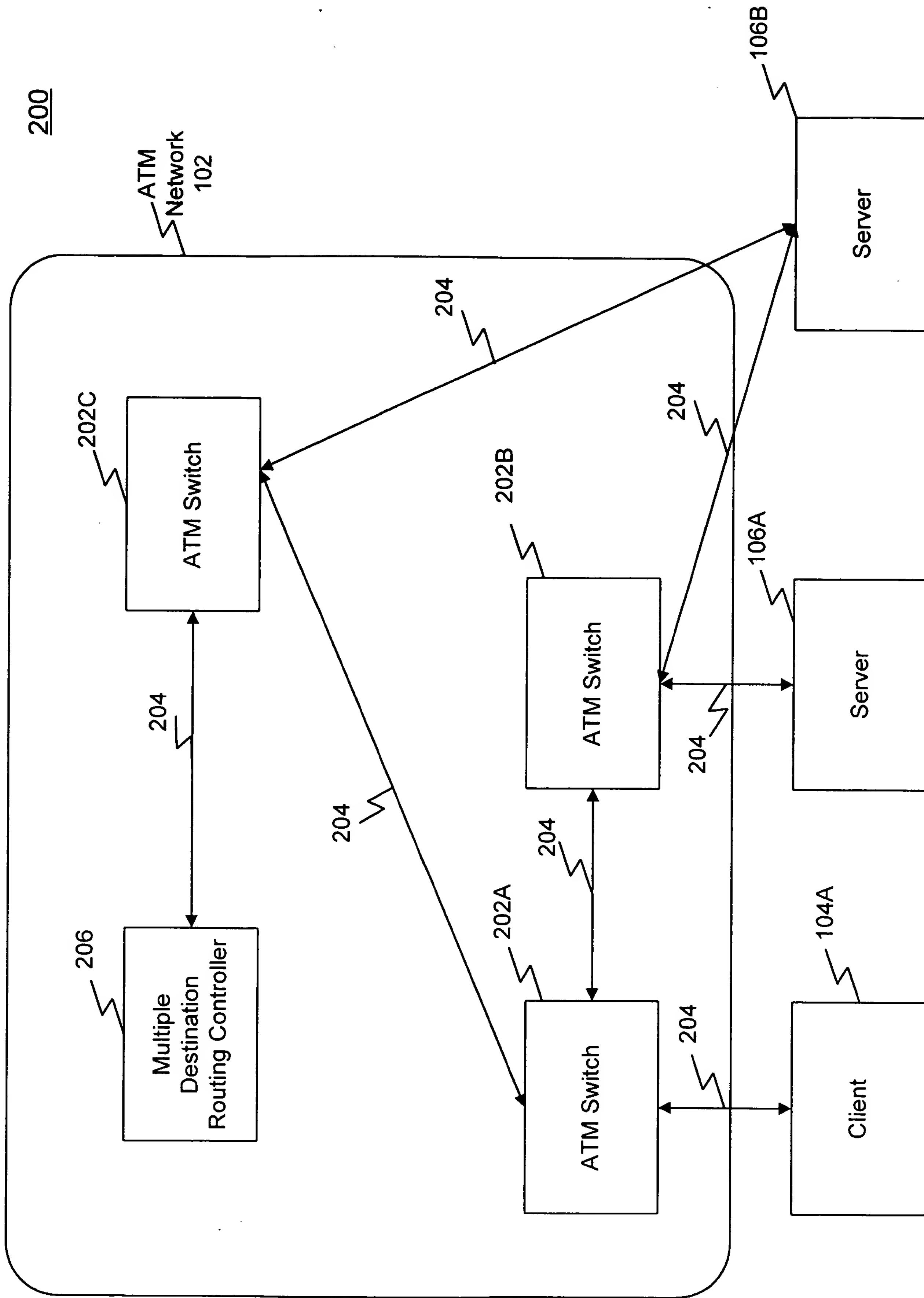
5

System and method for establishing a virtual circuit from a client, through an ATM network, to any one of a plurality of servers forming a functional group. The present invention operates as a peer group leader within the ATM network, routing virtual circuits when a routing request is received. The present invention selects an operation server from the functional group, computes a route from the client to the selected server, and returns the route in a designated transit list.

A148-03.WPD

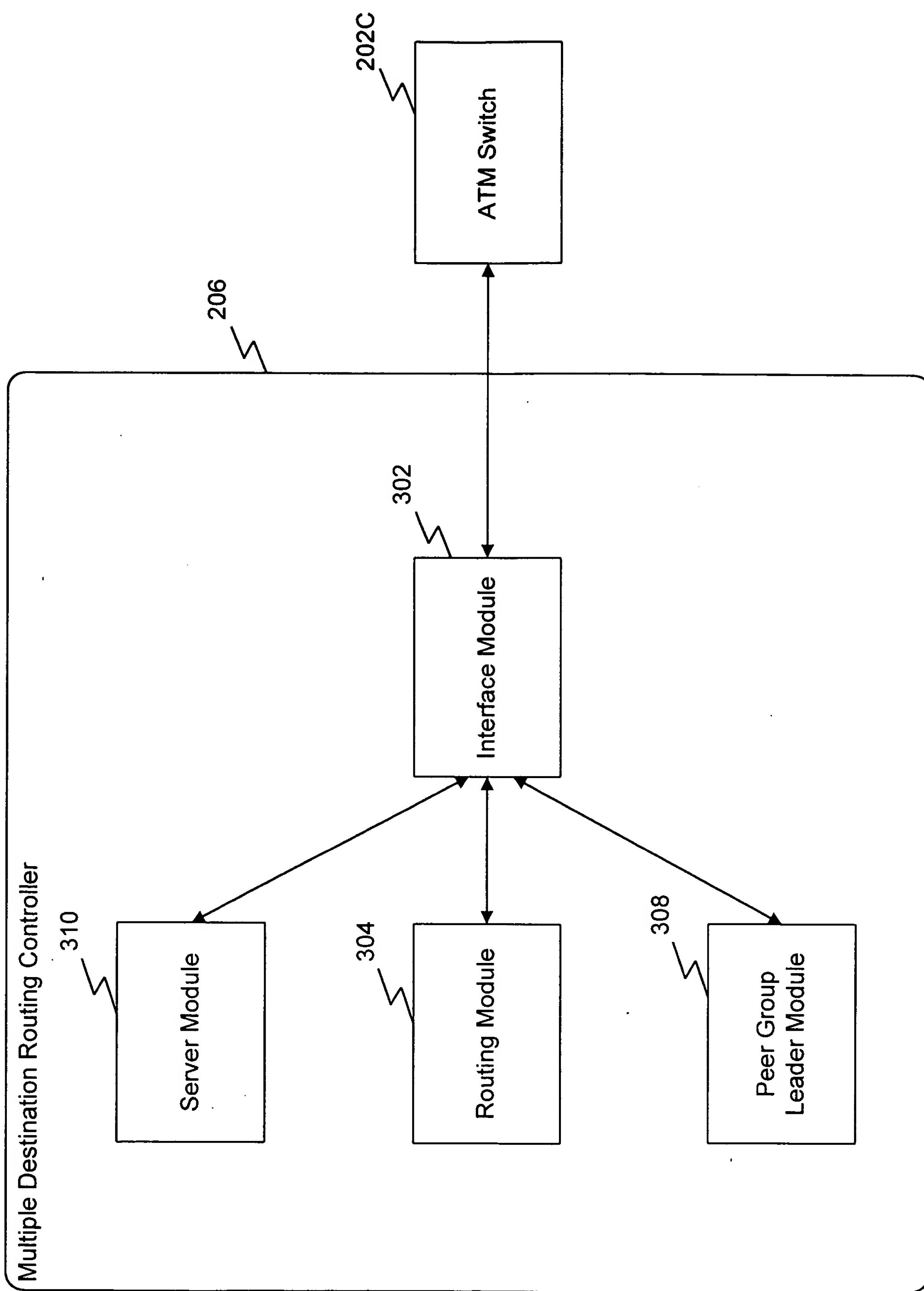


**FIG. 1**

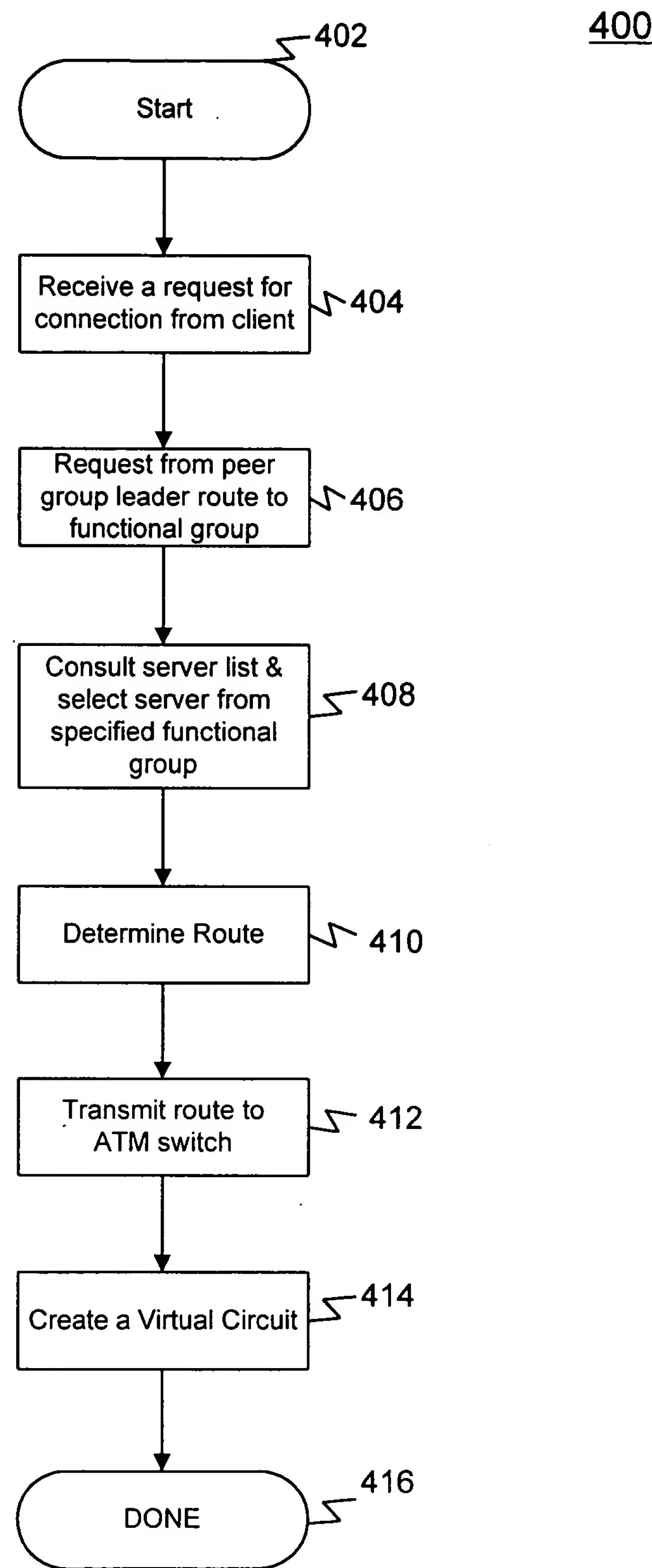


Figures.vsd|3

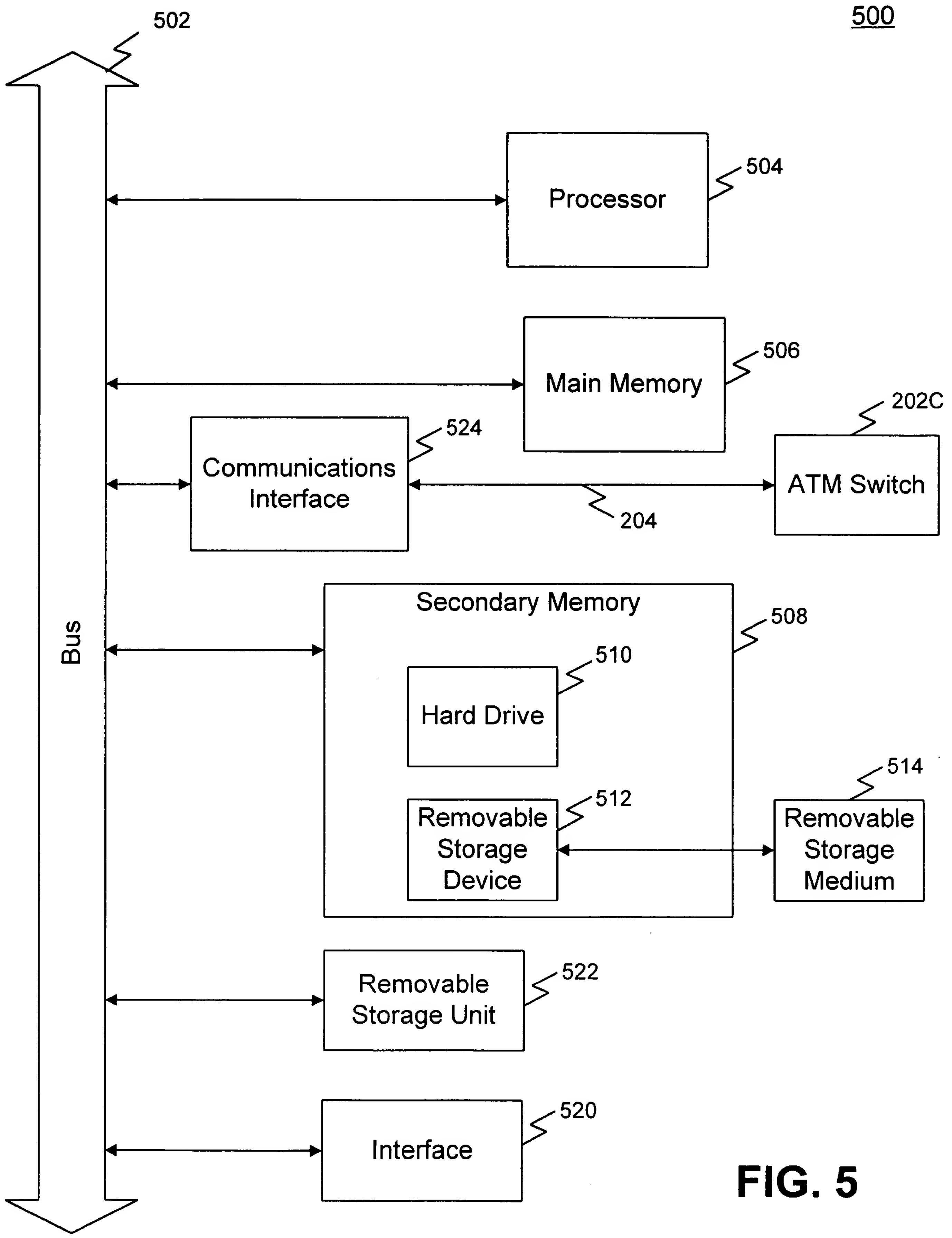
**FIG. 2**



**FIG. 3**



**FIG. 4**



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PRELIMINARY CLASS: 364

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